An Introduction TO THE ART OF Logick

Compos'd for the Use [illegible] and all such who have [illegible] being Instructed in [illegible] however Desire to [illegible] Liberal Science.

By John Newton, D. D.

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An Introduction
TO THE
ART
OF
LOGICK:

To the Worshipful

HENRY MILBURNE Esq;

Recorder of Monmouth.

'Tis now twenty Years and more, Sir, since I thought to have set forth England's Monarchy, and the Ancient Form of Government, both Civil and Military: I did then propose something (in the way of our Corporation) toward the restoring thereof, for which I acknowledge that my conference with you, both not only invented me in my former perswasion, but much animated and Encouraged me to resume my former attempt: and though I find my proposals to be much slighted and contemned in general, yet with some Persons of Worth and Real Learning, shall by force of argument con-

since my Book cannot, I shall not cease to pray
ded to desire; but shall hope that there may be
found some to joyn with you in giving encour
ment to such an Honourable undertaking, as
the teaching of Youth all the Sciences in th
own Tongue. An Introduction to the last
highest of them, The Art of Logick, I h
tender the world under the Patronage of y
Name, to whom I will vow Zeal for
Country, as my gratitude for the many Favo
I have received from you; and if at last I
perswade some few to give their children such
education in their own Tongue, (before they
trouble any thing in other Languages) our many
some good measure for them for all employ
both Sea and Land; God shall have the
they and their Country the profit; and I
shall through my self abundantly satisfied for
the pains that I have yet, or shall bestow
herein; and the rather, because I hope hereby
to make it appear, how much I am

SIR,

Your Faithful Serv
to Command,

John Newto

TO THE TEACHERS OF ENGLISH.

OU are they to whom this Nation is beholding for the first Foundation of all literature, by you are all our Youth first cultivated and instructed not only in Letters and Morality, but in the Principles of Religion also; and I could heartily wish that your Encouragements were more suitable to your indefatigable pains, great

worth, and honourable calling
But alas! I cannot but be deeply
sensible not only of the mean Re-
gard usually given to you, but al-
so of the great scorn to which you
are too often lyable: but let not this
discourage you in these your pious
as well as Honourable Undertak-
ings, but let it rather heighten your
spirits and encrease your courage
not only patiently to undergo all
those unjust contempts, that are by
foolish Men thus rudely cast upon
your persons; but also to scorn the
scorners; And to this purpose let
me intreat you, for the Glory of
God the edification of his Church
and the good of your Countrey, to
look a little further than the bare
teaching of Children to Read: be
not

not so forward and willing to quit you of those tender plants, by sending them to Latine Schools, (for their further instruction and greater advantage, as you perhaps may think;) for your parting with them so very early, doth not onely hinder their chearful Progress in the Latine and Greek Tongues, but for ever debar them from all opportunities of getting that knowledge in Writing, Arithmetick, and *Geometry*, which would capaciate them for those Callings, to which the meanness of their Parents Fortunes doth and will enforce thousand thousands of them: let your Industry therefore prevent their being sent either to them that shall do them no good at all, (I mean the

Latine

Latine Master, I or yet to those that are onely skilled in the dexterous use of a Goose quill; for as for Arithmetick, to the shame of that whole society, there are very few that are able to Teach a Child so much as is required to compute the quantity of a Glass Window; so that you need not despair of gaining so much your selves, as will enable you to do that work as well as they; and as for writing, the world doth swarm with so many Excellent Copy-Books, that it is no hard matter for you to make it appear what a useless creature a bare Penman is, I mean such a one as is neither able nor willing to teach children to Read, nor that which they chiefly profess, the Art of Arithmetick.

metick. Nor will the Theory or Practick of Vocal Musick be any impossible thing for you to Undertake; but this Accomodation would certainly ensue, that all Congregations would Perform the part of their Devotions to God with far greater Harmony than now they do; all Cathedrals would be better furnished with Quiristers and Singing-Men, and all Churches with far more fitting Parish-Clarks: Yea, and such helps there are for Astronomy also, that you may with Wonderful Ease have a Competent Knowledge in that Noble Science. Would you therefore but take upon you (as Easily you might) the Teaching of these

things,

things, your Schollars would not
only proceed with great Delight
but the visible profit that would
thereby accrue to them, and the
whole Nation would certainly
remove very much of that scorn
and contempt under which you
now groan; And now to com-
plear this Work, and to confine
the Latine Master to those chil-
dren only, that are intended for
some learned profession, acquain
those that are under your tuition
with the Elements of Rhetorick
and not of Rhetorick only, but
also of Logick: These Two
Sciences have such a natural de-
pendance on one another, that
they are not fit to go asunder;
and therefore as my Rhetorick is

ready

ready for you, so here I now present my Logick to you as the seventh and last Part of an English Academy, the which I have composed from those well known, and yet received Compendiums of this Art, which have been heretofore published by the late Learned Prelate Bishop *Saunderson*, Mr. *Airy*, Mr. *Smith*, *Burgersdicius*, and Others: And do believe that the Teaching of all these Sciences in the English Tongue, would make an Increase of Knowledge in our Land to an Admiration, and exceedingly further all those that are intended for Learned Professions, in the attaining of the Latine and Greek Tongues, or of any O-

ther

ther Language: but do with all
know how hard a matter it is
perswade the World from the
wonted and received Practice
And therefore I shall onely wis
well to the Things that I have
propounded, and leave them t
be more or less made use of b
you, as you shall be perswade
in your own minds.

J. Newton.

The First Book
OF THE
ART of LOGICK.

CHAP. I.

LOgick *is an Art which conducteth the mind in the knowledge of things.*

In this *Definition* two things are to be explained.

The *name* of the thing defined.

The *parts* of the *definition*.

For the first of these, *Logick* hath its *name* from this word Λόγος which signifieth

Speech, and according to *Aristotle*, *Speech* twofold, *Internal* and *External*. *Internal Speech* he calleth that which is conceived in the *Mind*: And that he calleth *External* which is expressed by *Words*; now *Logick* hath its name from both these kinds of *Speech* but chiefly from the *Internal*, which is the *Reason* or *Ratiocination* of the *Mind*, whereof the *External Speech* is but the interpreter of the *Internal*.

This word *Logick* may be taken two ways.

1. For the *Habit* which is gotten by Precept and Practice.

2. For the *Systeme* of *Logical* Precepts, by which that *Habit* may be more easily acquired.

And this *Definition* of *Logick* doth best agree with it in the first acceptation; though I shall here speak of it in the second: namely as it is taken for the *Systeme* of *Logical* precepts.

The parts of this *Definition* are two, the *Genus* and the *Differentia*; the *Genus* or general name here given to *Logick*, is *Art*, not a Manual Art, or Handy-craft-Trade, but an *Internal* and *Mental Art*: for the mind hath its Artificial workings as well as the body, as is manifest even in *Poetry*.

The *Difference*, or particular name,

which it is distinguished from other *Arts*, will be best conceived by considering three things: the *End*, the *Offices*, and the *Object* thereof.

The *Last* and *Principal End* of *Logick* is, *The Knowledge of things*; and its *Chief Offices* by which this *End* may be attained, are these three.

1. *To Define things that are Obscure.*
2. *To Divide things that are general and universal.*
3. *To Reason Concerning things Dubious.*

And the *Matter* or *Object* about which it treateth, is, *all that we can possibly either conceive in our minds, or utter with words*; but the manner how this *matter* is to be considered, is not: things are in their own nature, but as the *Instruments* of *Logick* may be applied to them.

The parts of *Logick* therefore are these two; *Thematical* and *Organical*.

The *Thematical* part is, that which treateth of *Themes*, with their various affections, and second notions, as of the *matter* of which *Logical Instruments* are composed.

The *Organical* part, is that which treateth of those *Instruments*, and their composi-

CHAP. II.

Of Simple and Compounded Theams.

A *Theam is any thing propounded to the* [u]*derstanding that it may be known.*

1. To know *is to form a conception or noti*[on] *of the thing proposed:* And a Notion *is the* [re]*presentation of a thing in the understanding.*

2. Notions *are of two sorts,* Primary *or* [Se]cundary.

3. A Primary Notion *is that which repres*[ents] *the thing as it is in it self.*

4. A Secundary Notion *is that which to*[geth]*er with the fictionatious represents the man*[ner] *how the mind doth either understand a thing,* [or] *explain its own understanding unto others.*

5. Theams *are either* Simple *or* Co[m]pound.

6. Simple Theams *are such Theams as* [are] *apprehended without any composition of* No[ti]ons; *as* a man, a house.

7. Compounded Theams *are such, as* [are] *understood by two or more* Notions, *ha*[ving] *joined together in the affirmation, or in the* [ne]*gation of a thing, as* a man doth run.

8. A Simple Theam *is either* universal [or] particular.

9. An universal Simple Theam *is that which in its own nature may be spoken of many in one and the same respect, and that univocally and without any ambiguity, as* a man a horse, a plant.

10. A Particular *or* Singular Theam *is that which in its own nature can be spoken of no more than one, as, Socrates Plato*; for though the names of *Socrates* and *Plato* may be given to many, yet that is by way of imposition, not of their own nature; names as names are naturally spoken of no more than one.

11. *Singular Theams* are call'd *individuals*, because they cannot be divided into any more of the same name and nature.

12. And *Individuals* are of two sorts.

1. Such as are *certain* and *determinate*; the which may be expressed three ways.

1. By *a proper name*, as *Alexander*, *Paul*; which signifies some certain and determinate particular.

2. By a *Pronoun Demonstrative*, as *this man*.

3. By *Circumlocution* or *Paraphrase*, as *the Apostle of the Gentiles*, that is *Paul*.

2. Such as are *uncertain* and *indeterminate*, which doth indeed express a *particular*

thing, but this or that *indifinitely*, as *Some man.*

3. An *Universal simple Theme*, otherwise called a *Predicable*, may be spoken of, two ways.

1. By *declaring what a thing is*, and then it is spoken of such things as do differ either

1. In *Species*, and is called *genus*, as *living creature*, *colour*: or

2. In *number* only, and is called *Species*, as *a man.*

2. *By declaring what kind of thing it is of which it is spoken*, and that either,

Essentially, And it is called *Differences*: or

Accidentally, and then either

Of Necessity; And then it is called a *Proper Accident*: as the *Risible faculty* in man; or

Not of Necessity, and then it is called a *common* or *simple Accident*, as *white.*

CHAP.

CHAP. III.

Of Genus and Species.

A *Genus* or General may be taken two ways.

1. *Grossly*, and then amongst *Grammarians* it notes the distinction of *Sex*, but amongst *Orators* it is taken for a *Multitude* which had their beginning from some one; thus the *Romans* are said to be the *Genus*, or race of *Romulus*; or else it is taken for that *ens* from whence that multitude had its beginning; thus *Romulus* is the *Genus* or stock from whence the *Romans* had their rise.

2. *Logically*, and then it is *Universale*, which is spoken of many that do differ so from Species, by declaring what a thing is; and thus also it is either

Supreme, and so a *Genus*, as that it cannot be a *Species*; and of this sort there are two *Generals* or *Predicaments*, or

Subaltern; and so a *Genus*, in respect of those things which are contained under it, and a *Species* in regard of that under which it is it self contained, as I have before shewn.

2. A *Species* also may be taken two ways.

1. *Civilly* as it is used amongst *Orators*, and so it is taken for *the external form, and beauty of the Body.*

2. *Logically*, and so it is an *Universal* which may be spoken *of many, that differ in number only, by declaring what a thing is.* The *Genus* in this definition, is this word *Universal*: the rest of the definition is put for the *difference*; in which by these words *spoken of many by declaring what a thing is* Difference and Accident, whether proper or common are both excluded: and by these words *differing in number only* Genus is excluded also.

3. A *Species* is either *subalterne*, that is, *Species* of one and *Genus* of another; or *Specialis*, that is to a *Species*; as *Man* cannot be a *Genus* as *a Horse, a man.*

The Union or Unity of *Genus* and *Species* are these following.

1. Every *Genus* must have two or more *Species*.

2. Nothing can be said of the *Genus* which may not be also said of every *Species*, and that *Species* is conceived in every individual.

3. Every *Genus* and *Species* may be alike predicated of all that are under them.

CHAP. IV.

Of Difference.

Difference is threefold.

1. *Common* which is some *seperable Accident* that doth distinguish one thing from another; as *white*, to *walk*, and doth belong to the fifth *predicable*; It is called *Difference* as it makes to *differ*, and an *Accident* because it is *inherent*.

2. *Proper*, which is either an *inseperable Accident*; in the fifth *predicable*, or a *proper Accident* in the fourth *predicable*, as *Quantity*, *Risibility*.

3. *Most proper*, by which one thing doth *differ* from another *essentially*: and this is that *Difference* which belongs to this third *predicable*.

In which we are to consider three things.

First, what this *Difference* is, and it may be defined three ways.

1. *Difference is an universal, by which one Species is essentially distinguished from another,*

this Rationality *doth distinguish a man from a beast.*

2. *Difference is an Universal, according to which a* Species *doth excel its* Genus: *because a* Species *doth in its* essence *contain such differences as the* Genus *in its* essence *doth not contain.* Thus *man* by reason of his *Rationality* doth excel a living creature in General, which is the *Genus* of *man.*

3. *Difference is an Universal, which may be spoken of many differing in* Species *or number, and declaring* essentially *what kind of thing it is of which it is spoken.* And this is the definition of *difference*, as it is a *predicable.*

Secondly, We are to consider how many fold this *difference* is, the which is either

1. *Divisive*, by which the *Genus* is divided into its several *Species*, as by *rational* and *irrational*, a *living creature* is divided into a *man* or a *beast.*

2. *Constitutive*, which doth *essentially* constitute some *Species*, and this is twofold.

1. *Generical*, which doth constitute some *remote Species*, but not the *next*, for the *next* is the *Genus*; thus *sensibility* in respect of *man* is a *Generical difference*, constituting first a *living creature* and remotely *man.* And this is always spoken of many differing in *Species* or *number.*

2. *Specifical*, which doth constitute the

mareſt Species: as *rationability* doth conſtitute *man*.

3. We are to conſider Its *properties* which are ſix.

1. Every *difference* is, *an Eſſential part of its Species, and of every individual of which it is ſpoken*.

2. Every *Difference* is *Dyadick*, in reſpect of its *ſuperior*, and *conſtitutive* in reſpect of its *inferiour*.

3. Every *difference* is in *nature* before its *Species*, and is the *internal* cauſe thereof.

4. No *difference* is *directly* in the *predicamental* order, but *indirectly* onely, and *collaterally*.

5. Every *difference* is *immediately* ſpoken of one, viz. its *ſpecies*, and *mediately* of many.

6. No *difference* is ſpoken of that *ſpecies* of which it is the *difference*, by way of *more* and *leſs*.

CHAP.

CHAP. V.

Of Proper and Common Accidents.

Accident is taken two ways.

1. For *all* that which is not of the *essence* of the thing; and thus a *house* in respect of an *house* may be called an *Accident*, because he is not of the *essence* of an *house*; but it is not taken here.

2. For *that only*, which is *inherent* in some subject, and this is twofold, *Proper* and *Common*.

1. A *proper Accident* is that which is *convertible with his* Species, *perpetually inherent in every of them*, *and in no others*, and this both constitute and belong to the fourth predicable.

It may be otherwise defined, thus:

A proper Accident, is an universal, which may be spoken of many differing in Species *or number accidentally, and of necessity declaring what kind of subject it is of which it is spoken*: and thus *visibility* is spoken of *man*. And this is two fold.

1. *Generical*, which flows from the *essence* of the *subaltern Species* or *highest Genus*, and this is always spoken of many *Species*.

2. *Specifical*

Specifical, which floweth from the essence of the lowest Species, and this is spoken of one Species only, and many individuals.

2. A Common Accident, is that which is convertible with his Species; and this doth constitute and belong to the fifth predicable, and may be otherwise defined three ways.

1. A Common Accident, is an universal which may or may not inhere in the subject, without the destruction of the subject, as man is the subject of whiteness, but he not being white doth not presently make him not to be a man.

2. A Common Accident, is such an universal as is neither Genus, Species or Difference, nor proper to the subject, though it be always inherent in it.

3. A Common Accident, is an universal, which may be spoken of many, differing in Species or number; accidentally declaring what kind of subject it is, of which it is spoken inconvertibly, and thus whiteness is a common accident belonging to man.

A common Accident is twofold.

1. Separable, which may be actually seperated from the subject in which it is inherent; thus whiteness may be seperated from man.

2. Inseperable, which cannot be actually seperated

separated from the subject in which it is inherent, but only in the mind or understanding; thus *blackness* is *inseparable* from an *Ethiopian*, though in speaking of one, I am not always bound to consider his *blackness*.

The *Canons* or *Rules* are these.

1. *Every Accident is in some subject, and always inheres in it.*

2. *Every Accident, if it be separated from the subject in which it was, perisheth.*

3. *No Accident can pass from one subject to another.*

4. *Some Accidents may be more & less in a subject, but not all.*

5. *Every Accident is in nature after its subject.*

6. *Whatever is wherein as in a subject is an Accident.*

CHAP

CHAP. VI.

Of the Antepredicaments.

Concerning *Simple Themes* we are to consider two things.

1. The several *ranks* or *orders* to which all *Simple Themes* may be reduced, and in which they may be ranked and placed.

2. The *way* and *means* by which they are or may be interpreted.

The particular *Orders* to which all *Simple Themes* may be reduced, are commonly called *Predicaments*, of which we are to consider three things.

1. The *Antepredicaments*, which are first to be learned, because the knowledge of them conduceth much to the understanding of the *Predicaments* themselves.

2. The *Predicaments*, which are ten *Orders* to which, as is said, all *Themes* must be reduced.

3. The *Post-predicaments*, which must be handled after the *Predicaments*, because the perfect knowledge of the *Predicaments* cannot be attained without these.

I begin with the *Antepredicaments*, the which are three in *general*, and seven in *special*.

special, to wit, three *Definitions*, two *Divisions*, and two *Rules*.

The *Definitions* are of *Æquivocals*, *Univocals*, and *Denominatives*.

Æquivocals are such things as *have their name common to many*. But the reasons for which it is applied to *many* are diverse; as that Domestick *living creature* is call'd a *Dog*, and a certain *Star* in the Heavens is call'd a *Dog*; now the name *Dog* is common to both, but the Domestick creature is call'd a *Dog* for one reason, to wit from *barking*, the *Star* is call'd a *Dog*, for another reason viz. the *Analogy* that it hath to a *Dog*. So a *living man* and a *painted man* agree in the common name of *men*, but the reasons for which they are so called are diverse.

The common names which for diverse reasons are given to the several things signified by them, are called *Æquivocating Æquivocals*, and the things expressed by those names, are called *Æquivocated Æquivocals*, thus a *man* is an *Æquivocating Æquivocal*, a *living man* and a *painted man* are *Æquivocated Æquivocals*.

Æquivocals are either such as are.

1. *By chance*, of which no reason can be given for their being called by that common name, or

2. By

2. *By consent*, of which some reason of dependency or similitude may be given for their being called by that common name, as a *living man* and a *painted man*, and those are *Synecdochically* called *Equivocals by Analogy*.

Of both which these *Canons* are to be observed.

1. *Equivocal* words if they be not distinguished, and taken in one sense, are of no use in any science.

2. Every *Ens* of *Entity* in respect of the ten *Predicaments*, is a common *Analogous* thing.

3. Every *Analogous* thing put by it self is to be taken in the most common signification.

Univocals, are such things, as have a common name, and the reason for which it is applyed to many, is one and the same in them all; thus the name of a *living creature* is common both to *Man* and *Beast*.

The common names which are for the same reason attributed unto many are called *Univocals*. And the things expressed by these names are called *Univocals*; thus a *living Creature* is an *Univocal*; and a *Man*, a *Beast*, a *Fish*, are *Univocals*.

Denominatives, are such words, as being

of near affinity in *sound* and *signification*, differ in *termination*, as *Justice* and *Just*.

In every *Denomination* there are three things.

1. *The Form Denominating*; and that is some *Accident* in the Abstract, which is inherent in the subject; as *Justice*.

2. *The Subject Denominated*, and that is the *substance* in which the form is inherent, as *Socrates*.

3. *The Denominative*, and that is some *accident* in the *Genere*, which is predicated of the subject, and riseth from the form, as *Just*.

The Form Nominative and the *Denominative*, as *Justice*, and *Just*, in reference to

The word { Agree in the *beginning*, Differ in the *end*.

The signification { Agree in the *thing*, Differ in the *manner*.

The use of the *Form Nominative* is, that the form of *predicates* [illegible] may be the better known.

A *singular predicate* is in reference to the *name* [illegible] not in reference to the *definition*, and therefore every *singularity* is *predicated* of its own predicate.

2. *Universal predication* is in reference to the *name* and *definition* both, thus *Socrates*

are *predicated* of the *inferiours* of the same *predicament*.

3. *Denominative predication*, is to be predicated in the Concreto, as an *Accidens* is predicated of its subject, thus the *Accidens* in the nine last *predicaments* are *predicated* of the *substances* in the first.

The *Division* belonging to this *Component* ents are two, one is of *words*, and the other of things.

A *Word* is either *Simple* or *Compound*.

A *Simple Voice* or *Word* is threefold.

1. In respect of the *sound* onely, which upon which doth signifie many things, as *Dog*, and *Canty*, equivocating equivocally.

2. In *substance*, which *signifies* only more words than one are used to express one thing, as *thing existent*, for an *Animal*.

3. In *sound* and *substance* both, when one word doth express some one thing, as *Animal*.

Compounded voice or *words* is also threefold.

1. In respect of the *sound* onely, as when more words then one are used to express one only thing, as *a living body* for an *Animal*.

2. In *substance* and *signification*, when one word expresseth diverse things, as *Dog* in the *Greek*, but hath diverse *significations*, as

every

every *equivocating equivocal* hath.

3. In *sound* and *substance* both, as when they are diverse words, and these diverse words do signifie more things, as these words *a learned man*, do signifie the *substance* and the *quality*.

Things are either *Universal* or *Particular*, and both of them are either *substances* or *accidents*.

1. *Universal substances* are spoken of the subject, but are not in it, as a *man* is predicated of *Socrates* and *Plato*, but inhereth not in any subject.

2. *Particular substances* are neither predicated of the subject, nor inherent in it, because they are *individual substances*, as *Socrates*.

1. *Universal accidents* are both predicated of, and inherent in their subjects, as *Whiteness* is spoken of *this*, or *that Whiteness*, and may be inherent in a *man*, or *a wall*, or *sheep*.

2. *Particular accidents* are not predicated of any subject, but are inherent in some, as *this whiteness* is in *Socrates*.

A *Subject* is either of *inhesion* or *predication*.

A *Subject* of *inhesion* is that in which some *accident* doth inhere, thus a *wall* in respect

of *whiteness* is a *subject* of *inhesion*, and *accidents* only are capable of such a *subject*.

A *subject* of *predication*, is that of which any thing is predicated *essentially*: and so every inferiour thing is the *subject* of his superiour; every universal *substance* as well as every universal *accident*, is capable of such a *subject*.

A thing may be said to be *inherent* in a *subject* eight several ways.

1. *Perfectively*, as a *part* is in the *whole*, and thus a *hand* may be said to be in a *man*.

2. *Comprehensively*, as the *whole*, is in its *parts*, and thus a *man* may be said to be in all his *members*.

3. *Potestatively*, as a *Species* in its *Genus*, thus *man* may be said to be in an *Animal*.

4. *Actually*, as a *Genus* in its *Species*, thus an *Animal* may be said to be in a *man*.

5. *Authoritatively*, as a *King* in his *Kingdome*.

6. *Eminently*, as a thing in the *end* thereof, and thus *vertue* may be said to be in *happiness*.

7. *Circumscriptively*, as a thing in its *place*, thus *Socrates* may be said to be in a *house*.

8. *Inherently*, as an *Accident* in its *Subject*, and

and thus *heat* may be said to be in *fire*.

Of these several ways we are to understand the last only, to wit of *Inhesion*, as *heat* is in *fire*, or as an *accident* in its *subject*.

The first *Antepredicamental rule* is this: *Whatever may be spoken of the predicate, may be spoken of the subject of that predicate* also; as whatsoever may be spoken of an *Animal*, may be spoken of *every sort* of *Animals*, as of *men*, *beasts*, and such like.

The *limitations* of this *rule* are many, but the most considerable are these three.

1. That you proceed not from *words* to *things*, that is, from *words* of the *first*, to *words* of the *second* intention: whence it follows not: *Animal* is a *Genus*, A *man* is an *Animal*, therefore *man* is a *Genus*.

2. That you pass not from one side of the *predicamental* order, to the other, and hence it doth not follow; *Man* is an *Animal*, an *Animal* is *rational* or *irrational*, therefore *man* is *rational* or *irrational*.

3. That you proceed not from the *converse* to the *contrary*; and hence this doth not follow; A *man* is *just*, *Justice* is a *quality*, therefore a *man* is a *quality*.

The second *Antepredicamental rule* hath two parts. The *first* is this; *Subaltern Generals* have the same *species* and *differences*,

as a *body* and an *Animal* have the same *differences*.

The *second* part is this: *Generals* not *Subalterns* have not the same *Species* and *differences*, as *substance* and *quality*.

They are said to be *subalterns Generals*, where of one is *essentially* contained by the other; as an *Animal* and a *Body*.

And they are said not to be *Subalterns Generals*, where the one is *not essentially* contained of the other; as an *Animal* and a *Science*.

The chief use of this *Rule* is, to prevent the confounding of the *Predicaments*, and to distinguish things between themselves, that do belong to diverse *predicaments*.

CHAP. VII.

Of the Predicaments in General.

THe *particular orders* or *predicaments*, to which all *simple Terms* may be reduced are ten, of which some are *more principal*, some *less*.

2. The *more principal predicaments* are the first six; and these are of two sorts, one of *substance* and the other of *accidents*.

3. *Predicamental*

Predicamental ranks or orders of *Accidents* are of two sorts. 1. *Absolute* as the *Predicaments* of *Quantity*, *Quality*, *Action* & *Passion*. 2. *Relative* as the *Predicament* of *Relation*.

4. The *last principle predicamental ranks* or *orders*, are these four, *When*, *where*, *Situation*, and *Habit*. And in these ten *predicaments* are all to be ranked, which can be *predicated* or spoken of any thing, *Directly*, *Collaterally*, or by *Reduction*.

First then, *Directly* and *primarily*, over the *supreme Genus*, or every thing of which the *supreme Genus* may be predicated *essentially* may be placed in the *predicamental* scale, and thus all *Generals*, *Specials*, and *Individuals* are placed in them.

Secondly, *Collaterally* or sideways; and thus some things are placed in the *predicamental* order, which are not spoken or predicated of the *supreme Genus*, but yet do divide the *Generals* and constitute the *specials*, and thus only *essential differences* only are there placed.

Thirdly, *indirectly* or by *Reduction*: thus *Matter* and *form* are in the *predicament* of *Substance*; *a point* and *unitie* in *quantity*, and *a proper accident* is in the same *predicament* with its *Subject*.

The *Canons* or *Rules* are four.

1.

1. All *words* of *Ambiguity* or *doubt*, at least before they be distinguished and limited, with all *feigned* and *impossible things*, are excluded the *predicament* order.

2. Every *real*, *finite*, *simple*, and *Univocal thing* is in some *predicament*, *directly*, *collaterally*, or by *Reduction*.

3. *Individuals* are in some *predicament*, not *themselves*, but by reason of *their Species*.

4. No one and the same numerical thing, can be in diverse *predicaments*, either in one respect, or in diverse.

CHAP. VIII.

Of Substance.

A Substance *is a thing subsisting of it self*, and it is either *first* or *second*.

The *first substance* is a *singular substance*, a *substance* that cannot be predicated of *subjects*, as *Alexander*, *Bucephalus*.

The *second substance* is an *universal substance*, or a *substance* which may be predicated of its *subjects*, as *a man*, *a horse*.

The *first substance* is *truly* and *properly substance*; and among the *second substances* every one is by so much more a *substance*

by how much it is nearer to the *first*.

The *Rules* or *Properties* are six.

1. *A Substance is not in its Subject.* This agreeth to every *substance*, and to every *substance only*, but not *only* to those which are *completely* so, but to the *differences* and *parts* of *substances* also.

2. *A Substance is universally predicated of the things of which it is predicated.* This agreeth to all *second substances* and their *differences*, and to no other, for the *first substances* are not *predicated* of any *subject*.

3. *Every first substance, doth signifie some particular thing.*

4. *A Substance, as it is a substance, is not contrary to another, but as it hath accidents or qualities:* thus *fire* and *water* are contrary, not as they are *substances*, but in reference to their *qualities* of *heat* and *cold*, &c.

5. *A substance, as it is a substance, is not varied by degrees, or receiveth not more and less: but the variation or comparison is in respect of accidents*, as a *wise man* and a *fool*, an *old man* and a *child*: one *water* hotter than another; they differ in *qualities*, not in *substance*.

6. One and the same *numerical substance* is capable of contrary *accidents*. As *Socrates* may be *sitting* and *standing*, and *white* and *black*.

CHA

CHAP. IX.

Of Quantity.

Hitherto we have spoken of the *predicaments* of *Substance*, those of *accidents* now follow: and *first* those that are *absolutely* so: as *Quantity*, *Quality*, *Action*, and *passion*.

2. Quantity *is an absolute accident, by which a thing is said to be great*, in bulk or number.

3. And hence *quantity* may be said to be twofold, *continued* or *disjoyned*.

4. *Continued Quantity* is that, *whose parts are joyned together by a common term*.

5. *Disjoyned Quantity* is that, *whose parts are not joyned together by a common term*, and this is nothing else but *number*.

6. *Continued Quantity*, is either *successive*, whose parts consist in *succession*; and that is *time*: or *permanent*, as *magnitude*, and *place*.

7. Every *Magnitude* is either, a *line*, a *superficies*, *or a body*.

8. *A Line is a Magnitude which can be divided but one way*; the *limit* whereof is a *point*, for every *line* is made, continued, and bounded with a *point*.

9. *A Superficies is a Magnitude which may be divided two ways*; the *term* or *limit* thereof is a *line*.

10. A *solid* or *body*, is that, *which may be divided three ways*, namely by *length*, *breadth* and *thickness*, whose *term* or *limit* is a *superficies*.

Now a *Place* is that *which* the *superficies* of *something* doth *subject* *in which it is*, namely the *thing* which is placed: this seems to be referred to *superficies*: for, *Place* (according to *Aristotle*, *lib. 4. cap. 4.*) *is the superficies next about the body which it encloseth*.

The *Canons* or *Rules* of these

Nothing is contrary unto Quantity in itself, but in reference unto Qualities only.

Quantity is not contrary unto *number*, in respect of *more* and *less*.

2. *Quantity cannot receive more or less*. As *one house* is not *more* or *less a house* than *another*, though *one* be a *greater house* than *another*. *Things* may be said to be *equal* or *unequal*, in respect of *Magnitude* or *greatness*.

CHAP. X.

Of Quality.

Quality is an absolute accident, by which it is simply and determinately declared what kind of thing that subject is, of which it is the quality.

2. *Quality* is the most copious of all the predicaments, and it is of two sorts, *passible* or *impassible*.

3. An *impassible quality*, is such a *quality* as doth not cause any passions in the senses, or any way affect them; and this is either *innate* or *acquired*.

4. An acquired *quality*, is such a *quality* as is *gotten by labour*; and this *Aristotle* maketh the *first species*; and this is either *lightly* removed from the subject, and is called a *habit*, as *vertue*; or *easily* removed from the subject, and is called *disposition*, as a *disposition to vertue*.

5. An *innate*, or *inbred quality*, is such a *quality* as is *natural*; and this *Aristotle* maketh the *second species*. This maketh the subject apt and fit for action, and is some *natural faculty* or *power*, as *visibility* is a *faculty naturally* belonging unto *man*.

6. A *Patible quality*, is such a *quality* as doth *affect the senses and causeth passion* in them: and that either, by *it self* or by *accident*.

7. *A Patible quality affecting the sense by it self*, *Aristotle* maketh the *third species*, and that which either *affecteth* the *body* or the *mind*.

8. A *Patible quality* which doth by *it self affect the body*, is either such a *quality* as *cannot* be easily moved, as *whiteness*: or such a *quality as may* be easily removed, and *some passion* of the *body*, as *blushing*.

9. *A Patible quality* which doth *of it self affect the mind*, is also either *hardly* removed, as *inveterate anger*, or *easily* removed, as some *sudden passion* of *love*, or *hatred*.

10. *A Patible quality* which doth *affect the senses*, *or causeth passion by Accident*: *Aristotle* maketh the *fourth species*, and this is *external proportion*, either in things *natural*, and then it is the *form* of the thing, or in things *Artificial*, and then it is the *figure*.

11. To the *first species* of *quality*, do all the *habits* of the *body* belong: as *health*, *sickness*, and all kind of *diseases*, and all *inferior habits*, as *faith*, *chearity*, and the *gifts of tongues*: with all disciplines, whether of *arts*

or *sciences* both *speculative* and *practical*, as *Logick*, *Geometry*, *Physicks*, *Metaphysicks*, and *Divinity*, and all both *vertues* and *vices*.

12. To the *second species* of *Quality* belong all *faculties* proceeding from the *essential forms* of all *substances*: as the *faculty* of *willing*, *speaking*, *laughing* in *man*, of *neighing* and *running* in a *horse*; and the *vertue* of *herbs*, *metals* and *stones*: all *occult qualities*, as *sympathy*, and *antipathy*, and all *influences* of *celestial bodies*, the *temperature* of the *body* and *disposition* of the *mind*, and such like.

13. To the *third species* of *quality* belong all *objects of sence*, as of *seeing*, *tasting*, *smelling*, *hearing* and *feeling*.

14. To the *fourth species* of *quality*, belong all *Mathematical figures*, with all *natural* and *artificial forms* of *bodies*.

The *Canons* or *rules* of *qualities* are three.

1. *Qualities* only *admit of contrarieties*, as *heat* and *cold*, the *contrariety* of *qualities* is most discernable in the *third species*, sometimes in the *first*, but not so frequently in the *second* and *fourth*.

2. *Qualities do admit of degrees*, as of *more* and *less*: but this doth not belong to all *qualities*.

3. *Things* in reference unto their *quality* may be said to be *like* or *unlike*.

CHAP. XII.

Of Action.

ACtion is *an accident*, by which a *subject* said to be *doing*; and that by one of these three waies.

1. By some *intrinsick quality*; as *fire* by its *heat* acts in the *water*.

2. *Instrumentally*, as he that *effects* some thing with a *sword* or *gun*, or such like.

3. By the very *formality* of *action*, and so it is to be taken in this *predicament*.

2. *Action*, as it is taken in this *predicament* is twofold, *imminent* or *transient*.

3. An *imminent action* is that, which *doth not cause any real change in the thing that suffers*, as *understanding*, *seeing*.

4. A *transient action* is that, which *doth effect a real change in the thing that suffers*, as *heat*, *cold*, &c.

The *Canons* or *rules* of *Action* are three.

1. *Action doth admit of contrariety.*

2. *Actions*

2. *Actions are capable of more and less.* These two *rules* are not proper unto actions, in respect of *themselves*, but by and for *their qualities*, by means of which the *Agent Acteth*: nor are they agreeable to every *action*: and this is most proper unto *action*.

3. *Every action doth of it self inferr passion.*

5. Passion *is an accident by which the subject is called* patient; or *it is the effect and a certain reception of action*: for every *passion* is received not so much by the *condition* of the *agent*, as by the *disposition* of the *patient*.

6. *Passion* is either *transmutative* or *intentional*.

7. A *transmutative passion*, is that which *maketh some real alteration in the patient, and answereth unto a transient action.*

8. An *intentional passion*, is that which *terminateth the action without any real alteration in the patient*; and this answereth to an *immanent action.*

The *Canons* or *Rules* of *Passion* are three.

1. *Passion doth admit of Contrariety.*

2. *Passion admitteth of more and less*: both these are to be understood, as in the *predicament* of *action* hath been declared.

3. *Passion is of it self and immediate inferred*

ved from action: and this is most proper unto patient.

CHAP. XII.

Of Relation.

HItherto we have spoken of such predicaments as are *absolute accidents*, come we now to that which is *respective*, namely *relation*.

2. Relation *is a respective accident, by which one thing is predicated of another, or in some way may be referred unto another.*

3. *Relation* is twofold, *intentional* or *real*.

4. *Intentional Relation* is that *by which some second intention is referred to another*: the *Genus* and *species*, the *cause* and the *effect*, the *subject* and the *accident*, are things that are *related*.

5. *Real relation* is that *by which the thing it self is referred unto another*: and this is twofold.

1. *Accidental*, when one thing is referred not in respect of its *form* or *matter*

ture, but only by *Accident*, as *poſſeſſor* and *poſſeſſion*.

2. *Eſſential*, when one thing is referred unto another according to its *nature* and *eſſence*, as *Father* and *Son*, *Maſter* and *Servant*.

6. In every *Relation*, two things are required, the *ſubject* and the *term*.

7. That is called the *ſubject*, which *is referred unto another*, and that the *term*, to which the *ſubject is referred*.

The *ſubject* is called the *Relate*, and the *term* is called the *Correlate*.

9. The *relate* and *correlate* are mutually referred to one another; and that by a double relation: in which reciprocation, that which is the *ſubject of one relation* is the *term* of the *other*, and the contrary.

10. In like manner that which is the *relate* in *one relation*, is the *correlate* in the *other*, and the contrary.

11. Every *relate* or *reſpective* is founded in ſome *abſolute predicament*: as *equality* in *quantity*, *likeneſs* in *quality*, *paternity* in *action*.

12. *Relates* and *Correlates*, as they are ſuch, are both together in *nature* and *knowledge*, and ſo do mutually put or take away one another, as well in *being*, as in *knowing*.

13. *Relates*

13. *Relates* are taken two ways.

1. *Materially* for those things with which the *Relatives* do agree: as *a father* is taken for the *man begetting*, the *Son for him that is begotten*; and so they are not *together* in *nature*, for the *father*, as a *man*, must needs be *before* the *Son*.

2. *Formally*, for that very *relation* which is in the subjects, by which the three are mutually referred to one another; as the *father* to his *Son*, and so they are in *nature* together.

14. *Knowledge* and *knowable* are taken three ways.

1. Both *Actually*, thus *that* is called *knowledge*, *by which we actually know*: and *that knowable*, *which is actually known*; and so they are in *nature* together.

2. Both *potentially*, as *that* is called *knowable*, *which may be known*; and *that knowledge*, *which may know*; and so also, they are in *nature* together.

3. One *Actually*, and the other *potentially*, and so *knowledge* is taken for that *which actually knows*, and *knowable* for *that which may be known*, and so they are not both together in *nature*.

The *Canons*, or *rules* of *Relates* are three.

1. *Relates admit of no more or less*. A Relate

it contrary to its *Correlate*; but *one Relate* contrary to *another*; yet not in respect of themselves, but in respect of *their subjects*. This rule therefore doth not hold in all, but in such *Relates* onely, which have contrary *foundations* or *subjects*; thus a *friend* and an *enemy* are contrary, because the *foundations* of *friendship* and *enmity*, to wit, *wishing well*, and *wishing ill*, are contrary.

2. *Relates are capable of more and less*: this rule also holds in respect of the *subjects* or *foundations*; and therefore in those *relates* only, which have a *changeable subject* or *foundation*; for when the *subject* or *foundation* is varied, the *relation* is intended or remitted. For example, *equal* things are made *more* or *less unequal*, when *Quantity*, which is the *subject* of *inequality*, is in one of the two, *more* or *less*.

3. *Relates are convertible*; that is, *every Relate is referred to its reciprocal Correlate*; as a *master* is the *master* of a *servant*, and a *servant* is the *servant* of some *master*.

CHAP. XIII.

Of the Four Last Predicaments.

Hitherto I have spoken of the *principal predicaments*; the *less principal* now follow, and they are four, *When*, *Where*, *Situation*, *Habit*.

2. The Predicament When, *is an* Accident *by which finite things are said to be in time past, present, or to come.* The words belonging to this *predicament*, make answer to such questions, as are made by this Word *When*? as *to day*, *to morrow*, *yesterday*, and the like. The properties thereof are to accommodate *time*, to *persons*, *things* or *actions*.

3. The *predicament* where, *is an Accident by which things finite are said to be in such place: where*, is not the *place it self*, but notes the *manner* or *circumstance of place*, and maketh answer to such questions as are made by this word *where*? as *at home*, *within*, *without*, *in this* or *that Country*, &c. The proper use thereof, is to accomodate *place*, to *persons*, *things*, and *actions*.

4. The *predicament of* Situation *is a* [illegible]

in *Ordination of parts and generation*, or, *in placing of parts in Generation*: to make up *situation* a threefold habitude is required.

1. Of the *parts* of some *whole* among *themselves*.

2. Of the *parts* of some *whole* unto *that whole*.

3. Of the *parts* and the *whole* in reference to *place*.

Yet every *ordination of parts* is not *site* or *situation*, but that only which they have in the *whole* by *Generation*: The property thereof is to be the neareſt aſſiſtant unto *Aſſiſtance* of all the extrinſecal reſpective *accidents*.

All *geſtures* and *poſitions* of body belong to this, as *ſtanding*, *ſitting*, *walking*, *&c.* Not as they ſignifie theſe actions, but as they ſignifie the *poſition* and *order* of the parts in the *whole*, or in *ſome place*.

5. *The predicament of* Habit, *is an accident by which ſome garment*, or *ſomething like a garment, is put about, hanged upon, or any other way joyned to a body*. The *body* having it, is *ſubſtance*: the *thing habiting* is always ſome *artificial form* belonging to the fourth *Species of Quality*. The Application of this to it, is that which maketh this *predicament*: The property thereof is always to be inherent in many,

many, in the *habit*, and in him that hath but in divers respects, for it is in the that hath it, as in a *subject*, in the *habit* thing framed, as in a *cause*.

To this belong all kind of *garments*, whether they be such as are used for *necessity*, *shoes* for the *feet*, and *cloaths* for the rest of the body; or for *distinction*, as a *Mitre* a *Gown* whether for *Divines*, *Lawyers*, or *Citizens*, for *ornament*, as *Rings*, *Jewels*, *Deckings*, the like.

CHAP. XIV.

Of Opposition.

HAving done with the *Antepredicaments* and the *Predicaments* themselves, the *post-predicaments* now follow, and they four.

Opposition, *Order*, *Motion* and *Manner having*.

2. Opposition *is such a repugnancy of simple terms as neither the one can agree with the other, nor both of them with a third, after the same manner.*

3. One of the *opposites* is either *opposed*

or to *many*; those *oppositions*, where *one* is opposed to *many*, are called *Disparates*; as a [illegible] and *a horse*, of which *Aristotle* in his *Logick* makes no mention, nor are they to be reckoned amongst the kinds of *opposition*.

4. Those *oppositions* where *one* is *opposed* to *one* are either of *a thing* and *a thing*, or of *a thing* and *not a thing*.

5. *Opposition* of *a thing* and *a thing*; is either *relative* or *contrary*.

6. *Relative opposition*, is between the *relative* terms, as the *relate* and his *correlate*: for though the *relates* do mutually depend upon one another, in reference to their *simple being*, yet are they opposed to one another in reference to their *being in a subject*: as *father* and *son*, but this is the least kind of *opposition*; the conditions belonging to these are set down in the *predicament* of *relation*.

7. *Contrary opposition* is between *contrary terms*: And these are called *contraries*, that being contained under the same *Genus* are the greatest distance between themselves, and mutually expell one another from the same subject, that is capable of them; as *heat* and *cold*.

8. *Contraries* are of two sorts, *mediate* and *immediate*.

Immediate contraries are such as admit of

of *no medium* between them, but the one of them is always in the subject, that is capable of them, as *like* and *unlike*, *health* and *sickness*.

10. *Mediate contraries* are such as do agree in a *same medium*: so that though one be expelled, it is not necessary that the other should be in that subject, from which the first is expelled, as *white* and *black*.

The *Canons* or *Rules* of *Contraries* are these following.

1. *True contrariety by it self is not to be found but in qualities by themselves, and absolutely known.*

2. *Contraries in the highest degrees*, cannot *be in the same subject*: so what is *hot* in the highest degree, cannot be *cold* at all; but in remiss degrees they may *both* be in the *same* subject.

3. *One of the contraries being remitted, either is intended or heightened, and the contrary*: for every subject capable of two *contrary* qualities, must needs be filled up with the whole possible latitude of one of them.

11. *Opposition* of *a thing* and *not a thing* is either *privative* or *contradictory*.

12. *Privation opposition*, is between *Habit* and *privation*. And Habit *is the presence of a thing in a fit subject*: but privation *is the*

re thereof: as *sight* is a *habit*, *blindness*, *privation*.

The *Canons* or *Rules* are three.

1. *Habit and privation are about the same subject.* And hence *privation* cannot properly be, but in that subject which is capable of the *Habit*; a *man* therefore may be said to be *blind*, but a *stone* cannot.

2. *Privative opposition requires determination of a certain time: neither can privation be known of a subject, but after the time that by nature and fitness it might receive the habit*; as none can be said to be *bald*, until the *time* is past according to nature, they should have had *hair*.

3. *From privation to habit there is no regress naturally, the privation being perfect*; that is, *when as death hath taken away the act, and next beginnings of habit, and leaveth nothing in the subject but the remote beginnings thereof*: thus he that is once *quite blind*, cannot ordinarily and by natural means *ever see again*.

13. *Contradictory opposition* is between *contradictory* terms. And those things are said to be *contradictory*, which are expressly contrary, *affirmation* and *negation*: as a *thing* and *not a thing*, *a man* and *not a man*.

The *Canons* or *Rules* are two.

1. *Contradiction is the first of all oppositions, and*

and so the measure of all the rest: for in every *opposition* there is *virtually* included a *contradiction*: and the *opposition* is to be thought so much the greater, by how much it comes nearer to a *contradiction*.

2. *Between contradictory things, there is no medium*; neither of *denomination*, or of the *subject* (and therefore one of the *contradictory* things is affirmed of a *thing*, and *not a thing*) nor *privation*, or of the *form*.

CHAP. XV.

Of Order, and of that which is said to be together, before, or after.

ORder *is that, according to which something is said to be before, or after another thing, or together with it.*

A thing may be said to be *before* or *after* another, five several waies. 1. *In time.* 2. *In nature.* 3. *In dispositon*, or *order.* 4. *In knowledge.* 5. *In Custody.*

1. That is said to be *first in time*, that is the most ancient; thus *Romulus* was before *Cato*, and the City *Pergamus before* that of *Rome.*

2. That is said to be *first in Nature*, which

which cannot be reciprocally affirmed in consideration of existence, as, there is a *man*, therefore there is a *living creature*, but it doth not follow, there is *a living creature*, therefore there is a *man*, a *living creature* therefore is *in nature before a man*, and every *Genus before* its species.

5. That is said to be *first in order* or *disposition*, which is nearest the beginning: Thus the *Exordium* in an oration is said to be before the *proposition*, the *proposition* before the *narration*, the *narration* before the *confirmation*, the *confirmation* before the *confutation*, the *confutation* before the *conclusion*, and in every *science* or *discipline*, that is *first* which is put in the *first* place, and thus *Letters* are before *syllables*.

6. That is said to be *first in honour* or *dignity*, that is the most worthy; thus a *King* before his *Subjects*, a *Father* before his *Son*, a *Master* before his *Servant*, *Gold* before *Silver*, and *Vertue* before *Gold*.

7. That is said to be *first in Causality*, which is any way the cause of another's existence; thus the *Sun* is before *Light*.

8. So many waies as a thing may be said to be *before* another, it may also be said to be *after*.

9. So many waies as a thing may be said to be

be *before* another, it may be also said to
together with another; but two of the
are more usual than the rest, together *in*
and together *in nature*.

10. They are said to be *together in time*
are existent at the *same time*.

11. Things may be said to be *together*
waies *primarily* and *secondarily*.

12. They are said to be *primarily toge*
in time, which begin to be at the *same*
and they are said to be *secundarily together*
time, when the one begins to be, *before*
other doth cease to be, thus *Aristotle*
Plato are said to be *contemporaneous*, or
ther in time; though *Plato* was born *before*
ristotle, and did also dye *before* him.

13. Things may be said to be *together*
nature two ways, first *simply* and *absolutely*,
then in respect of some *third*.

14. Things are said to be *together si*
and absolutely, which are *reciprocally toge*
according to the consecution of existence,
so that the one is not the cause of the ot
existence. Thus the *relate* and *correlate* are
gether in nature; and two *effects* depend
upon the *same* next cause, as *risibility* and
bility in man.

15. Things are said to be *together* in
spect of some *third* things, which under

Genus are in *division* opposed to one another; thus a *man* and a *beast* are said to be *together in nature*, not *simply* and *absolutely* in respect of *themselves*, but in respect of a *living creature*, for a *living creature* is predicated of them *both together*, and not of *one first*, and *another after*. In this a *Synonymus Genus* is distinguished from a *homonymous* or *equivocal Genus*, because this is not predicated of its *several species together*, but of *one first*, and *another after*.

CHAP. XVI.

Of Motion.

Concerning *Motion*, four things are to be considered. 1. *The Praecognita*. 2. *The Definition*. 3. *The several kinds*. 4. *The Rules* belonging to it.

1. The *Praecognita* are either such as concern the *definition*, or such as concern the *division* thereof.

2. The *praecognita* concerning the *definition of motion*, are three. 1. The *subject* in which it is. 2. The two *termes from which*, and *to which*. 3. The *measure*, or *instant time*, and from these three every *motion* must be defined.

4. The

4. The *Praecognita* concerning the *division* of *motion*, or the *several kinds* of it, are these three.

1. *Motion* is taken two ways, *viz.* either *generally* for any mutation, whether it be in time or in *an instant*, and thus it comprehendeth *Generation* and *Corruption*, or *specially* for such mutation which is *made* and *measured* by time, and thus it comprehendeth these four *species*, *augmentation*, *diminution*, *alteration*, and *latio*, and not *Generation* and *Corruption*.

2. *Motion* as it is divided here, is *motion* generally taken, and as it comprehendeth all the mutations.

3. *Motion*, although it be put as a *predicament*; yet it is also in a *predicament*, but in a diverse manner; it is in the *predicament* of *passion* as it is in its own nature, first as it is taken in reference to its terms, *from* which and *to* what.

5. *Motion*, in the general is thus defined. Motion is a *mutation made in the subject*. (Whether *in the first matter*, *or in the body from one term to another*, either in time, *or* in an instant.

6. *Motion* is twofold *instantaneous* or *successive*. *Instantaneous motion* is that which is made in an *instant*; and this is *Generation* and *Corruption*.

8. *Generation* is an *instantaneous* motion

which causeth a mutation, either in the first or second matter, as in the subject, by the privation of form as the term from which to another form as the term to which the motion is made.

9. Corruption is an instantaneous motion, which maketh a change in the same matter from substantial form to the privation thereof, or from a thing to not a thing.

10. *Successive motion*, or *motion* that is made in time, is either a *motion* to *quantity*, to *quality*, or to *place*.

Motion to *quantity*, is that, whose terms are in *quantity*, and this is either *augmentation* or *Diminution*.

12. *Augmentation* is such a *motion*, as maketh a successive mutation in the body, from quantity to a greater.

13. *Diminution* is such a *motion*, as maketh successive mutation in the body, from a greater quantity to a less.

14. *Motion* to *quality*, otherwise called *alteration*, is a successive mutation from one contrary quality to another.

15. *Motion* to *place*, or *local motion*, is such motion, as maketh a successive mutation in the subject by removing it from one place to another.

The *Canons* or *Rules* to be observed, are these five following.

1. *Every motion is distinguished by its term to which it tends*, conformed formally: although that *Augmentation* and *Diminution* be to *quantity*, yet the motion of the one is to *less*, and the other to a *greater quantity*.

2. *Some motions are distinguished by the manner*, as *Generation* and *Corruption* are distinguished from the rest, for that they are effected in an instant, whereas all other motions are performed in time.

3. *Some motions are distinguished by the subject*, as *Generation* and *Corruption* are the first matter, other motions in the body.

4. *Rest is privatively contrary to all motion in the term from which it moves*: for, rest is the *perfection of motion*, viz. of subsequent motion, though it be the perfection of the precedent.

5. *These motions are diversly contrary*, which *terms are diversly contrary*, for the motion from *white to black*, is contrary to the motion from *black to white*.

CHAP. XVII.

Of the Manner of Having.

A Thing may be said to be *had* eight several wales.

1. *In reference to habit and disposition*, and so it is referred to the predicament of *quality*.

2. *In reference unto quantity* : and so it is referred to the predicament of *quantity*.

3. *In reference unto Garments, and other things which are about the body, or whole* : and so it is referr'd to the predicament of *habit*.

4. *In reference to the having of a thing on some part* ; as to have a ring upon a finger, and other things which are about the parts, and thus it is also referred to the predicament of *habit*.

5. *In reference to the part of a thing*, as to have a hand, and this is referred to *substance*.

6. *In reference to a vessel*, as to have wine, this is referred to the predicament of *where*.

7. *In reference to a possession* ; as to have

house, and so it is referred to the predic-
ment of *Relation*.

8. The last manner of *having* is the h-
ving a wife; and this according unto A-
stotle, is the most improper manner of
And this shall suffice to be spoken of *sim-*
whether singular or *universal*;
of the several *predicamental ranks* or *ord-*
to which all *simple theams* may be reduc-
and in which they may be ranked and p-
ced.

CHAP. XVIII.

Of a Propolition.

Come now to speak of *compounded Theams*.
A compounded Theam is by some ca-
a *Connexion*, by others a *propolition*.

An Enunciation, &c. a Proposition is a
dicative, congruous and perfect oration
true, or false, without any ambiguity.

Concerning which we are to consider
parts, the *kinds* and the *affections*.

The *parts* of a *proposition* are two, viz.
thereof (*part*) *signing*, or *signed*.

The *parts signing* are *simple* terms,

those are either *categorematical*, or *syncategorematical* as was shewed before.

The *parts signed* are three, the *subject*, the *predicate*, and the *Copula*.

1. The *subject* is all that which *precedes the Copula in the proposition*, as, *man is a living creature*: there this word *man* is the *subject*.

2. The *Predicate* is all that which *is spoken of the subject*, as, *man is a living creature*: there these words *living creature*, is the *predicate*.

3. The *Copula is the principal verb joyning the predicate to the subject*: and every *proposition* is some person of this verb substantive *I am*] or of a verb adjective as in this *proposition*, *Socrates lived at Athens*.

But here two things must be observed. First, That *the subject doth not always precede*, and *the predicate follow the Copula in order of the parts or terms*, but in sense or construction: as in this *proposition*, *Hard is the way to vertue*. Where *the way to vertue* is the *subject*, and this word *hard* the *predicate*.

Secondly, it is to be observed that a *proposition may be either explicite, or implicite*.

1. *Explicite*, in which the three parts, the *subject*, the *Predicate*, and the *Copula* are expressed,

expressed, as in this proposition, *A man is a living creature.*

2. *Implicite*, in which all these three parts the *subject* the *predicate* and the *Copula* are not expressed, but some of them implyed, as *I walk.* And may be resolved by turning the verb into a participle and using some part of this verb [*I am*] and thus this implicite proposition, *I walk*, is turned into this, *I am walking*; in which all the parts of a proposition are expressed.

As for the severals *sorts* or *kinds* of *propositions* we must know, that a *proposition* is distinguished three ways: *viz.* 1. According to its *Substance*, *Quantity*, and *Quality*.

1. According to its *substance* or *parts* of which it doth consist: and so it is either, *Categorical* or *Hypothetical*.

A *Categorical proposition* is that which doth consist of *one* subject, *one* predicate, *and one* Copula, and therefore the matter thereof are simple terms; as, *A man is a living creature.* And this is either *Pure* or *Modal*.

A *pure categorical proposition* is, when the *predicate* is purely *affirmed or denied of the subject* without *expressing* the manner of *Affirming or denying*.

A *modal Categorical proposition* is that which, *besides the subject, predicate, and copula*

...add some modification to shew how the predicate ...is in the subject. (But of these afterwards.)

2. A *Hypothetical* which doth consist of two *Categorical propositions* joyned together by some conjunction; as, if a man be a living creature, then a man is a body.

Secondly, A *proposition* may be distinguished in respect of its *quality*: and so *first*, it is *affirmative* or *negative*, and again it is in respect of *quality*, *true* or *false*; but if it be ask'd of the *quality* a *proposition* is of, it must be answered, that it is either *affirmative* or *negative*. An *affirmative proposition* is that in which the *predicate* is affirmed of the *subject*.

A *Negative proposition* is that in which the *predicate* is denyed of the *subject*, as, a man is not a stone, and this is the *formal quality* of a proposition.

The *material quality* is that by which it is said to be either *true* or *false*.

That is a *true proposition* which doth agree with the thing, as, a man is a living creature, a man is not a stone. And that is a *false proposition*, which doth not agree with the thing, as, a man is a stone, a man is not a living creature.

And because the *matter* of a *proposition* may be sometimes necessarily true, sometimes manifestly false, and sometimes neither plainly

ly true, nor altogether false, the *quality* of *proposition* in respect of the *matter* about which it is made, is *threefold*.

1. *Necessary*, when the *predicate* doth agree with the subject from the nature of the thing, as that it cannot possibly be otherways: as in this proposition, *man is a living creature*.

2. *Impossible*, when the *predicate* is so repugnant to the nature of the *subject*, as that it cannot be united: as in this proposition, *a man is a stone*.

3. *Contingent*, when the *predicate* hath such an indifferent relation to the *subject* that it neither doth neither agree with it, nor yet is repugnant to it: as in this proposition, *a man is learned*.

In *necessary matter*, *affirmative propositions* are always true, *negative* false: as, *a man is a living creature*, is true: *a man is not a living creature*, is false.

In *impossible matter*, *affirmative propositions* are always false, *negative* true: as, *a man is a stone*, is false: *a man is not a stone*, is true.

In *contingent matter*, *propositions* whether *affirmative* or *negative*, are neither always true nor always false: for either of them both may be true or false: as, *a man is learned*, *a man is not learned*.

Thirdly, A *proposition* may be divided in respect of its *quantity*, into an *universal*, *particular*, *indefinite* and *singular*.

An *universal proposition* is that which *hath a note of universality added to a common or universal subject*; as, *every man is a living creature*.

A *particular proposition* is that, in which a *note of particularity is added to an universal subject*; as, *some man is a living creature*.

An *indefinite proposition* is that, in which *a note whether universal or particular is put before the universal subject*; as, *a man is learned*.

A *singular proposition* is that, in which *the subject is singular, whether it be a proper name* as Socrates *is a Philosopher*; or, *whether it be a common name with a note of singularity set before it*, as, *this man is learned*.

For the better understanding of that which hath been said, we must observe.

1. That a *note* is not a *part* of a proposition, but the sign of quantity in some proposition.

2. That some *notes* are universal: 1. *Affirmative*: as, *every one, always, whensoever*. 2. *negative*: as, *none, no body, never*. Some particular: 1. *Affirmative*: as, *a certain man, some body, sometimes*. 2. *negative*; as *not every*

Some singular, as also pronouns Demonstratives which design some certain: as, *this*, *he*, and this word *all*, when it is taken collectively not distributively, as, all *the singulars* are

3. That an *indefinite proposition* in *necessary matter* is equal to *an universal*: in *contingent matter* it is equal to a *particular*: And the *matter* of a proposition is then said to be *necessary*, when the *subject* cannot be without the *predicate*, and then it is said to be *contingent*, when the *subject* may be without the *predicate*: as in this *proposition*, *a man is learned*, the *matter* is *contingent*; but in this, *a man is a living creature*, the *matter* is *necessary*: for he cannot be a *man* except he be a *living creature*.

According to this threefold division there ariseth a threefold question concerning a *proposition*.

What proposition is it? To which it must be answered, *Categorical* or *Hypothetical*.

2. *Of what quality is the proposition?* To which it must be answered, *Affirmative*, or *Negative*.

3. *Of what quantity is the proposition?* To which it must be answered, *Universal*, *Particular*, *Indefinite* or *Singular*.

CHAP. XIX.

Of the Opposition of Categorical Propositions.

PUre categorical propositions, as they have reference to one another, have these three affections.

1. *Opposition.* 2. *Æquipollency.* 3. *Conversion.*

Opposition *is the repugnancy of two Categorical propositions either in quantity alone, in quality alone, or else in quantity and quality, in which there is the same subject, the same predicate, and the same copula*; as in these, *every man is just*; *no man is just*.

Hence it is apparent that these *five* conditions are required that any *proposition* may be said to be *opposite*.

1. *That they be two different propositions*; and therefore these are not opposite, *a man is a living creature*, *a man is a living creature*; for these are not *two* but *one*, not *differing* or *repugnant*, but the *same*.

2. *That they be different either in quantity or in quality, or in both these*; therefore these are

not opposite; *some man is learned*, *not every man is learned*; for they *differ* only in their *words*, but not in *quality* nor in *quantity*.

3. *That both propositions have the same subject and the same predicate*; therefore these *propositions* are not *opposite*. *A man is white*, *a man is black*; for though these simple terms *white* and *black*, are in themselves opposite in *sense* and *reality* of the thing; yet they are not opposite in respect of the *form* of *opposition*, which is required in *propositions*, because they have not both the *same predicate*.

4. *That both propositions be* ad idem, *or to the same thing*; these *propositions* therefore are not *opposite*. *A Blackamore is white*, *viz.*, in respect his teeth. *A Blackamore is not white*, *viz.*, in respect of his body.

5. *That they be opposite in respect of the same time*; otherways they are not *opposite*; as *St. Paul was at Rome*, and *St. Paul was not at Rome*, in reference to *distinct times*, both *propositions* may be true.

These conditions being observed there are four ways by which two *propositions* may be said to be *opposite* to one another, *Contrarily*, *Subcontrarily*, *Contradictorily*, *Subalternally*.

Two *propositions* that are *Contrarily* and *Subcontrarily opposite* are *opposite* only in *quality*; and those are *subalternately opposite*,

are

are *opposite* only in *quantity*. And such as are *contradictorily opposite*, are *opposite* both in *quantity* and *quality*.

Opposition by way of *contrariety* is the repugnancy of two *universal propositions* in *quality*; as, *every man doth run*, *no man doth run*. And these in a *contingent matter* may be together both false, but cannot be both together true.

Opposition subcontrarily is the repugnancy of two *particular propositions* in *quality*; as, *some man doth run*, *some man doth not run*; and these in a *contingent matter* may be both together true, but cannot be both together false.

Subalternate Opposition is the repugnancy of 2 *affirmative* or 2 *negative propositions* in their *quantity*; as, *every man doth run*; *some man doth run*; *some man doth not run*, *no man doth run*.

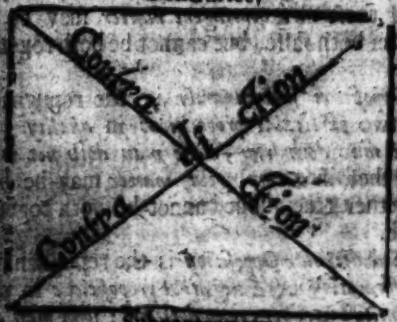
Contradictory opposition is the repugnancy of two *propositions* both in *quality* and in *quantity*; so as that if *one* of them be *affirmative*, the *other* shall be *negative*; if *one* be *universal*, the *other* shall be *particular*; as, *every man is learned*, *some man is not learned*.

Hence it is apparent. 1. *That every proposition is opposite to some proposition or other.* *That every proposition which is opposite to another, is opposite, either by way of* contrariety, subcontrariety

contrariety, subalternation, or contradic
all which may be easily apprehended fro
the following Scheam.

Every man is learned. *No man is learn*

Contrariety



Subcontrariety.

Some man is learned. *Some man is not learned.*

And thus it hath been shewed what *oppositi*
and how many ways *one proposition* may be
to *another*; come we now to the *rules* o
observed in such *propositions* as are any wa

such *propositions* as are *opposite* by way o
contradiction, have these four *Rules* or *Ca*

1. *Contradictory*

1. *Contradictory propositions* are the greatest, because they are repugnant both to *quantity* and *quality*.

2. *Contradictory propositions* can never be both true, or both false; if but one be true, the other must be false: as, *every man is just*, *some man is not just*.

3. Every *proposition* of what *quantity* or *quality* soever it be, it is *opposite* unto one, and but one, by way of *contradiction*.

4. In every *legitimate* disputation, a *contradictory proposition* is always concluded by the *Thesis* of the respondent.

And here observe that *contradictory propositions* are of *two* sorts, *viz.* 1. Either such as have a *common subject*, and such are those of which we have hitherto spoken: or, 2. such as have a *singular subject*, and which are called *singular propositions*, having the *same subject* and the *same predicate*, but one *affirmative*, and the other *negative*: as, *Socrates is learned*, *Socrates is not learned*.

2. The *laws* of such *propositions* as are opposite by way of *subalternation*, are *two*.

1. If the *universal* or *subalternating proposition* be true, then the *particular* or *subalternate proposition* is also true, and the contrary: as, if this be true, *every man is learned*, this is also true, *some man is learned*.

2.

2. If the *particular* or *subalternated proposition* be false, the *universal* or *subalternating proposition* is also false, but not the contrary; as if this be false, *some man is learned*; this shall be also false, *every man is learned*.

3. *Propositions* which are *opposite* by way of *contrariety* have this only *rule*, that they can never be both together true, but they may be both together false, *viz.*, in a *matter* that is *contingent*; as these are both false, *every man is learned*, *no man is learned*.

4. *Propositions* that are *opposite* by way of *subcontrariety* have one *rule*, namely this, that they may be both together true, but cannot be both together false; as these be true, *Some man is learned*, *some man is not learned*.

And thus much concerning *opposition*, or the *first affection* of *Categorical propositions*.

CHAP.

CHAP. XX.

Of the Æquipollency of Categorical Propositions.

Æquipollency *is the equivalency of two propositions in sence and signification, though they differ in words, by vertue of this word of negation,* [not] *being either set before the sign and subject, after the sign, and subject; or, but before and after, in which there is the same sign, and the same predicate*; as, *some man is learned, not every man is learned*; whence it is apparent, that to a true *æquipollency* these conditions are required.

1. That they be two *propositions*.

2. That these two *propositions* have the same sence, so as that both of them be *affirmative*, or both *negative*, both *true*, or both *false*, and both of the same *quantity*.

3. That they differ in *words* though not in *sence*.

4. That they be made *equivalent*, by vertue of this word of negation, [*not*] so that these *propositions*, *a man is learned*, *a man is unlearned*, are *materially equivalent*, viz. equivalent in the *sence*, but not formally; and

we understand *equivalency* in this place.

5. That this word of negation [*not*] either set *before* the sign and the subject, or *after* the sign and the subject, or both *before* and *after*.

6. That both have the *same* subject and the *same* predicate.

Categorical propositions are as many several waies made *aequipollent* as this word of negation [*not*] may be severally placed: and that *before*; for this word of negation [*not*] may be set

1. Only *before* the *sign* and *subject*, and then it makes two *contradictory propositions* to be *equivalent*; as, *not every man is learned*, *some man is learned*.

2. Only *after* the *subject* and *sign* of quantity, and then it makes two *contrary propositions* to be *equivalent*; as, *no man is learned*, *every man is learned*; this holds if the first be negative.

3. Both *before* and *after* the *sign* and *subject*, and then it maketh two *subalternate propositions* to be equal: as, *not every man is learned*, *some man is learned*: all which are fully expressed in these Distichs.

"If *after* sign and *subject* this [*not*] be,
"Contraries then, make *aequipollency*.

"Only *before* make *contradictories*,
"But *'fore* and *afi'* are *subalternants* guise.

CHAP. XXI.

Of the Conversion of Propositions.

Conversion *is an apt mutation of the whole subject, into the place of the whole predicate, and of the whole predicate into the place of the whole subject, keeping the same quality, but sometimes changing the quantities*: as, *every man is a living creature, some living creature is a man.*

In *conversion* we are to consider the *proposition* to be *converted*, which is that, whose terms are to be transposed, and this is the first; as *every man is a living creature.*

Then we are to consider the *proposition converting*, into which the other is to be *converted*, and this is the latter: *as some living creature is a man.*

This *conversion* is *three-fold.*

1. *Simple*, in which the *predicate* is changed into the place of the whole subject, and the *contrary*, keeping the same both *quality* and *quantity*: as *no man is a stone*, therefore

no stone is a man. In this *conversion* an *universal negative*, is turned into an *universal negative* and a *particular affirmative* into a *particular affirmative.*

2. By *accident*, in which the whole *predicate* is changed into the place of the whole *subject*, and the *contrary*, keeping the same *quality*, but changing of the *quantity*: as, *every man is a living creature, therefore some living creature is a man.*

In this *conversion* an *universal affirmative* is turned into a *particular affirmative*, an *universal negative* into a *particular negative.*

3. By *contraposition*, in which the whole *subject* is changed into the place of the whole *predicate*, and the *contrary*, keeping both the same *quality* and *quantity*, but the *finite* terms made *infinite*: as, *every man is a living creature, therefore every thing that is not a living creature, is not a man.* In this conversion an *universal affirmative* is turned into an *universal affirmative*, and a *particular negative* into a *particular negative*; but this is the most useless and indeed no *conversion*, because the *terms* are changed, which in a true *conversion* is not to be admitted.

But that this concerning the *terms* may be more clear; we must observe, that these *terms* are said to be, *Finite*, before we

word of *negation* [*not*] is not set; as, *infinite* before which this word of negation [*not*] is set; as, *not a man, not a stone, not learned.*

The *Rules* for *conversion* are four.

1. *If the proposition to be converted be true, in a legitimate conversion, the proposition converting is also true,* and the contrary; as if this be true, *every man is a living creature,* this is also true, *some living creature is a man*; but not on the contrary: for this is not true, *every man is learned,* and yet this is true, *some man is learned.*

2. *Every proposition cannot be converted* (*one way*), *but every proposition may be converted some way*: this *proposition* therefore cannot be converted by *simple conversion*: *every man is a living creature*: for then the *proposition converting* should be false: that therefore it may be known, what *propositions* may be *converted* this, or that way, these Verses are to be considered.

E. I. I. *conversion simple* make,
I. E. O. of *accident* partake,
A. O. O. for *Contraposit* sake.

In which the four letters A. E. I. O. are to be understood. A. signifies *universal affirmative*, E. *universal negative*. I. *particular affirmative*.

formative, and O. *particular negative*: accord
to this Distich.

A. affirms, E. denies, both *universal* n
I. affirms, O. denies, but both *particula*

The first verses shew, that E. is to b
converted into E. and I. into I. by *simple co*
version, that an *universal negative* into an
universal negative, &c. so likewise A. into
and E. into O. to be *converted* by *accident*
lastly A. into A. and O. into O. by *contra*
tion.

2. *That the whole predicate be changed*
the place of the whole subject, and the cont
ry.

4. *That we beware, that imperfect term*
not taken for such as are intire. This *pr*
firm therefore, *a certain tree is in the f*
is not thus *converted*, *therefore a certain*
is in the tree; but thus, *therefore a certa*
thing in the field is a tree: *Some man d*
see one that is blind, is not thus to be *co*
verted, *therefore some one that is blind d*
see a man, but thus, *therefore some thing s*
that one that is blind is a man: *Every*
mouse a boy, is not thus to be *converte*
therefore a certain boy was no mouse,

, therefore a certain person which was a boy, is an old man.

And thus much concerning the *affections of the Categorical propositions.*

CHAP. XXII.

Of Modal Propositions.

Hitherto we have spoken of such *Categorical propositions*, as are *pure*, and without *modes*: it remaineth now that we speak something of such *categorical propositions* as are called *modal*, the which are thus defined.

A modal proposition is (as we defined it above) *one in which, besides the subject, predicate and copula, we add some modification to shew how the predicate is in the subject*: as in this proposition: *it is impossible that a man should be without reason.*

The division of *modal propositions* is taken from the diversity of the *modes*, which respect either the *matter* or the *form* of the *proposition*.

Such *modes* which respect the *matter*, that is, the *subject* and the *predicate* without connection

nexion, are *twofold*.

1. Such in which the *mode* affects the *ſelf* only, as he which doth *eaſily* learn is *ingenious*: where *facility* is the qualification of the learner.

2. Such in which the *mode* affects the *dicate* only, which doth more frequently happen.

And this is *twofold*.

1. That which reſpects the *time* ſignified as *Peter was here a long while*.

2. That which reſpects the *thing* ſignified as, *a horſe runneth ſwiftly*, of which ſort theſe, *it is a holy thing, it is right, it is* &c. which if they be reſolved into Nouns make the *predicate* it ſelf; as, *to worſhip God is a holy thing*, that is, *to worſhip is holy*; and in this manner the reſt may be reſolved.

Secondly, other *modes* reſpect the *form* the connexion of the *terms*, to which reſpect by the definition of a *modal propoſition* agree, and is *two-fold*.

1. *Principal*, in which the *modes* are affi with ſome *primary* manner, ſuch as are four.

2. *Neceſſary*, that is defined to be which *is* and *cannot be otherwiſe*; as, *a man muſt needs be a living creature*; and

rce of an *universal affirmative*.

2. *Contingent*, and is defined to be that ich *is and may be otherwise*, or *may not be*, *perchance it may rain to morrow*; and hath e force of a *particular affirmative*.

3. *Impossible*, which is defined to be that ich *neither is, nor can be*, as it is *impossible* at a *man* should be a *beast*; and hath the rce of an *universal negative*.

4. *Possible*, which is defined to be that ich *is not, but may be*; as it is *possible* that *may flourish again*, and hath the force *particular negative*.

2. *Less principal*, in which the *modes* are ted in a *secondary manner*, and may be re- ed to the four first.

1. *Probable*, and may be reduced unto *ntingent*.

2. *True*, and is referred to *necessary*.

3. *Easie*, and is contained under *possible*.

4. *Difficult*, and is included in *impossible*.

That this may be the better conceived, five gs must be considered.

1. That the *modification* of a *proposition* doth sist in two things.

1. The *saying*, which is the *whole Categori- proposition*; which supplies the place of *subject* only; as, *it is possible that water be warm*.

2. The manner, which supplies the p[lace] of the *predicate*, in what part of the *proposi[tion]* soever it be set.

2. In every *modal proposition* the *manner* the *modification* is the *most principal*, and do[th] the office of the *copula*.

3. No other *modes* or *manners* but the *f[our] modal* are in *Logick* to be regarded; that is, such as respect the connexion of the *terms*.

4. The four *modes* respect the four *diff[er]ences* that are in things.

Now things may be said,

1. *Always to be*; with which agreeth *[ne]cessary to be*.

2. *Never to be*; with which agreeth this, *is impossible to be*; and this, *never to be actu[al]*, *an infinite number*; or, *never to be either a[c]tually* or *potentially*, as, *an irrational man*.

3. *Sometimes not to be, but also may be*: [to] with these agreeth this, *it is possible to be*.

4. *Sometimes to be, but also may not be*, [to] with these agreeth this, *it is contingent*.

5. That the four *modes* may be distingui[sh]ed, two things are required.

1. That they respect the *same time*, other[wi]se the *same thing* may be both *possible* [to] *impossible*: as, It is *impossible* for one that [is] *sitting* to *run* [that is *while* he *sitteth*]: but if it [be] referred unto *another time*, it is *possible*.

2. T[hat]

2. That they be referred to the *same subject*, as, *whilst I see* Socrates *running*, Socrates *of necessity must run*. But if it be referred to the *liberty* of *Socrates*, then it is *contingent*, for he *may* and he *may not run*.

The *quantity* of *modal propositions* as it hath reference unto the [*dictum*] or [*saying*] is altogether the same with *pure Categorical*, and is the *material quantity*: but as it hath reference to the *mode*, that is *universal* which hath an *universal mode*, as *necessary* or *Impossible*.

That is *particular*, which hath a *particular mode*, as *possible* or *contingent*, and this is the *formal quantity*: as, *it is impossible that any man should be a stone*; the which is *particular* in reference to the [*dictum*] or [*saying*], and *universal* in respect of the *mode*.

In like manner the *quality* of *modal propositions*, as it hath reference to the *saying*, is the same with *pure Categorical*; and as it hath reference to the *mode*, that *affirmeth* which hath an *affirmative mode*, viz. *necessary* or *contingent*: and that *denies*, which hath a *negative mode*, viz. *possible* or *impossible*. But if respect be had to the *whole modal Proposition*, that is *negative* in which the *mode* is *formally denyed*, and that *affirmative* in which is *not denyed*: as this, *It is impossible that a*

man should not be a living creature, is *negative* in respect of the *saying*, and *negative* in respect of the *mode*, but in respect of the *whole proposition* it is *affirmative*.

Every *true modal proposition* is *necessary*, every *false*, *impossible*; and between these there is no mean.

In the *necessary mode*, that *proposition* is *true*, whose *matter* is *necessary*: *false*, whose *matter* is *impossible*, or *contingent*.

In the *impossible mode* that *proposition* is *true*, whose *matter* is *impossible*, and that is *false*, whose *matter* is *necessary* or *contingent*.

In the *contingent mode*, that *proposition* is *true*, whose *matter* is *contingent*, and that is *false*, whose *matter* is *necessary* or *impossible*.

In the *possible mode* that *proposition* is *true*, whose *matter* is *necessary* or *contingent*, and that is *false*, whose *matter* is *impossible*.

The *Opposition* and *Æquipollency* of *modal propositions*, *Logicians* have expressed by these fictitious words, *Purpurea*, *Iliace*, *Amabimus*, *Edentuli*: The four *syllables* of every of these words do signifie the four *modes*, the *first syllable* in every word doth signifie the *possible mode*: the *second syllable*, the *contingent mode*: the *third syllable* the *impossible mode*; and the *fourth syllable* the *necessary mode*.

As for the four *vowels* which are in these words

words, A notes that the *dictum* and the *mode* are both affirmative. V. notes that they are both *negative*: E. notes that the *mode* is *affirmative* and the *dictum negative*: I. noteth that the *mode* is *negative*, and the *dictum* or *saying affirmative*, according to these Verses.

V, both denies. *A both* affirms: *but I,*
Destroys the mode; *E*, dictum *doth* deny.

Which being premised the whole matter may be easily understood by the following Scheam.

Pur	*not possible not.*	*not possible.* I
pu	*not contingent not.*	*not contingent.* Ii
re	*impossible not.*	*impossible.* a
t	*necessary.*	*necessary not.* ce
A	*possible.*	*possible not.* E
ma	*contingent.*	*contingent not.* den
bi	*not impossible*	*not impossible not.* tu
mus	*not necessary not.*	*not necessary.* Ii

In which Scheam those are *equipollent*, which are contained in any one Word, but those at the bottom, top sides and opposite Angles, are in the same manner *opposed*, as hath been shewed concerning the *opposition* of *pure Categorical propositions*; therefore, *Purpurea*, and *Iliace*, are *contraries*: *Amabimus*, and *Edentuli* are *subcontraries*. *Purpurea* and *Edentuli* are *contradictories*; and so are *Iliace*

and *Amabimus*; *Purpurea* and *Amabimus* are *subalterns*, and so are *Iliace* and *Edentuli*.

As for the *conversion* of *modal propositions* I willingly pass them by, as being unwilling to give my Reader the trouble of that, which will not requite his pains.

To these *modal propositions* those may be reduced, which are called *exclusive*, *exceptive*, and *reduplicative*.

An *exclusive proposition* is that in which an *exclusive particle is found*, as, *only*, *alone*, and the like: as, *man only is rational*.

And it is *exclusive* either of the *predicate* or the *subject*. *Exclusive of the predicate*, is that which *by a sign of exclusion put between the subject and the predicate doth exclude other predicates from the same subject*: as, the *Elements are only four*; and this is called *a proposition excluding the extream*.

Exclusive of the subject is that, which with an *exclusive particle set before it*, *excludes all things else subjects from participation with the same predicate*: as, *only man is rational*: and this is absolutely called *an exclusive proposition*.

A *Proposition excluding the extream* is expounded by *taking away the sign and removing from the predicate any other number or thing*, as the case shall require; as this, *the Elements are only four*, is thus expounded, *the Elements are four and no more*.

A *proposition exclusive of the subject*, though it may be otherwise expounded, yet is it more simply done by the *universal affirmative* of the transposed terms, as this, *a man only is rational*, is thus expounded, *every thing that is rational is a man*, and so of the rest, *mutatis mutandis*.

An *Exceptive proposition* is that in which there is *an exceptive particle*; as, *except, besides, unless, and such like*; as, *every living creature besides a man is irrational*.

In every legitimate exception, the term *excepting* must be of a larger comprehension than the term *excepted*, that it may be distributed.

This is expounded by two exponents, the first of which ought to be of the *same quantity and quality, with the exceptive in the subject of the excluded term*; and the *other* of *divers quantity* and *quality*, in which the *subject* is the *excepted term*, and the *predicate* the same with the *exceptive*; as, *every living creature besides a man is irrational*; is expounded by these, *every living creature which is another from a man is irrational*; And, *some man is not irrational*; and thus may any other be expounded.

A *Reduplicative proposition* is that, in which there is found some *reduplicative particle*; as, *according to, in respect of, as far forth as*, and

such like; as, *man is rational*, and this is called, a *Restrictive* or *a limitative proposition*.

Reduplication is *twofold*.

1. *Uniform*, which is also called *simple* or *specifical*, when the *reduplication* is by the *same* name; as, in this, *man as man is rational*: and this *reduplication* is not used, but in an *essential predication*, where the *predicate* so agreeth with the *subject*, as if it were the very *subject* it self.

2. *Not uniform*, or *compounded*, when the *reduplication* is made by *divers* names, whether it be of the *Genus*, and so is called *Generical*; as in this, *a man, as he is a living creature, is sensible*; or of the *part*, and is called *partial* or *Synecdochical*, as in this, *a man in respect of his soul is immortal*: or of the *Accident*, and is called *Accidental*: as, Socrates, *as he is a Philosopher, doth dispute*.

A reduplicative proposition is expounded by four *exponents*: the *first* of which *exponents*, doth attribute the *principal predicate* to the *subject*. The *second* doth attribute the *reduplicative predicate* to the *subject*. The *third* doth attribute the *principal predicate* to the *subject*, by way of *universality*. The *fourth* is a *causal inferring the principal predicate* from the *reduplicative*: as this, *a man, as he is a living creature, is sensible*, may be expounded

pounded by these several *exponents* thus.

1. *A man is sensible*: and *a man is a living creature*, and, *every living creature is sensible*. And, because *something is a living creature*, that *something is sensible*. In like manner may all other *reduplicative propositions* be expounded, whether *negative* or *affirmative*.

But the whole matter may be more readily done, and no less commodiously, if it be expounded by a *simple exposition* by the help of one *causal* only: thus the former proposition, *a man as he is a living creature*, may be thus expounded: *because a man is a living creature, therefore he is sensible*.

CHAP. XXIII.

Of Hypothetical Propositions.

Hitherto we have spoken of *Categorical propositions*, come we now to *Hypothetical*.

An *Hypothetical proposition* is that, which doth consist of two *Categorical propositions* joyned together by some *conjunction*; as, *man is a living creature*, and, *a man is learned*.

Hypothetical propositions are of three sorts, *conditional*

ditional, Copulative, and *Disjunctive.*

1. *A Conditional* or *Hypothetical proposition* strictly taken, in which *several categorical propositions* are joyned *together* by a *conjunction conditional*; as, *if it be day, then the Sun doth shine*: to this may that which is called a *causal proposition*, be reduced; such as is this, *because the Sun doth shine it is day*: and also this, *the Sun doth shine, therefore it is day*, and note that the *first Categorical proposition* is called the *antecedent*, and the *second* is called the *consequent*, because it followeth from the former.

2. *Copulative*, in which *several Categorical propositions* are joyned *together* by a *Conjunction copulative*; as, *a man is rational*, and, *a beast is irrational*. To these, those *propositions* are referred, which are called *adversative*, as, Socrates, *though he is not an Orator*, yet *he is a Philosopher*; and *comparative*; as, Socrates *is as learned as* Plato; and *significative of Place*, as, *where* Socrates *doth Read*, Plato *doth dispute*; and *significative of time*, as, *while* Socrates *doth read*, Plato *doth dispute*.

3. *Disjunctive*, in which *several propositions Categorical* are joyned *together* by a *conjunction disjunctive*: as, *either it is day, or it is night*.

A conditional proposition is

12 *True*

1. *True*, when the *Antecedent* doth prove the *consequent*; as, if it be granted, that *it is day*, it followeth, that *the sun doth shine*: therefore the *antecedent* being granted, the *consequent* must of necessity be granted also.

2. *False*, when the *antecedent* doth not prove the *consequent*; but the *antecedent* being granted, the *consequent* doth not necessarily follow; as, granting that *a man* is *a living creature*, it doth not follow, that he is *learned*: this *conditional proposition* is therefore *false*, *if a man be a living creature, then he is learned.*

A *Copulative proposition* is,

1. *True*, when both parts thereof are *true*: as this is true, *a man is a living creature*, and *a man is rational*, for both the parts thereof are *true*.

2. *False*, when either *one* or *both* the parts are *false*; as this is *false*, *a man is a living creature, and irrational*, for the *latter* part is *false*, namely this, *a man is irrational.*

A *disjunctive proposition* is,

1. *True*, when *one* or *both* of the parts are *true*: as this is *true*, *either it is day, or it is night*, for *one* of the parts is *true*, though the *other* be *false*.

2. *False*, when *both* parts are *false*; as this is *false*, *A man is either a tree or a stone*, for *neither* of them is true.

Hypothetical

Hypothetical propositions have not properly either *quantity* or *quality*, but what they have from their *Categoricals*: neither have they such *oppositions* and *Æquipollencies* which *Categorical propositions* have: they are capable but of *one* only kind of *opposition*, and that is *Contradictory*: and this is made by putting the *particle* of *negation*, in the first part of the *Hypothetical proposition*: and therefore this, *Socrates doth run, he is a living creature*, is *contradictory* unto this, *if* Socrates *doth not run, he is a living creature*. And thus it is also both in *Copulative*, and in *disjunctive propositions*.

The

The Second

BOOK

OF THE

ART of LOGICK.

CHAP. I.

Of Definition.

1. HAving done with the *first* part of Logick, namely that which treateth of *Theams both simple and compound*, with their various *affections*: come we now to the *second* called the *Organical*, or that which treateth of *Logical instruments*, and their *composition*.

2. *Logical instruments* are these four:

Definition

Definition, Division, Syllogism and *Method*.

3. Definition *is the explication of the thing which is defined*; and this is either *nominal* or *real*.

4. A Nominal Definition *is that which sheweth the signification of the name*; whether it be by giving the *Etymology* thereof, or by expressing it by some other *Synonymous* word more generally known.

5. A real Definition *is that which sheweth what the thing is*: and this is twofold, *perfect* or *imperfect*.

6. A real & a perfect definition *is that which doth explain the thing by essential attributes*; whether they be such as *constitute* the thing; and then it is a *Definition* of the *substantial form*, which doth most exactly explain the nature of its *species*; as, a *man is a rational living creature*: Or such as do partly *constitute* the thing, and partly *produce* the same *necessarily*; and then it is a *Definition* of the *accidents*, and this is threefold.

1. *Formal*, which consists of the *Genus*, and the *subject* of the *accident*; for the *subject* of the *accident* is as it were the *form*; as, *Thunder is a noise in the clouds*.

2. *Causal*, which doth *demonstrate the nature* of the thing defined, and it is the *next cause* of the *accident*; either *efficient* or *final*.

3. Doth

3. Both *formal* and *causal*, which sheweth *Genus*, *subject*, and *cause* of the thing defined; as if an *Eclipse* of the *Moon* be thus defined, *it is a privation of light in the Moon, by the interposition of the earth*: The *Genus is privation*, the *difference* or *form* is *the subject, viz.* the *Moon*; and the *efficient* cause is the *interposition of the earth*.

7. A *real* but *imperfect definition*, otherwise called a *description*, is that, which *explains* the nature of the thing, by certain *accidental attributes*: it doth consist of a *Genus*, or something which doth supply the place of a *Genus*, and of *proper* and *common accidents*, which supply the place of the *difference*: as, *a man is a living creature that is risible*, hath *two feet*.

And because our knowledge begins from the *accidents*, therefore this kind of description is most in use with all.

The *Canons* or *Rules* are:

1. *In every science, you are to begin with the definition of the name thereof.*

2. *A description may be fitable as well to the substantial, as the accidental part of any thing.*

3. *A Species only is defined by a formal definition.*

4. *An accident only is defined by a caus-*

sal

sal definition, or by a formal and a cau
both.

3. *A definition consisting of the form a*
cause both, doth differ from a Demonstration
the disposition of the terms only.

6. *Every descriptive definition whether fo*
mal, or formal and causal both, is an or
tion.

CHAP. II.

Of Division.

DIvision *is the resolving of the whole int*
parts.

1. And this is either of some ambiguous word into its several significations: or of the whole into its parts.

2. Now the *whole*, is either *simple* or *aggregate.*

3. *Division* of the *whole*, *simply* and *properly* so called, is threefold.

1. *Universal into its subjective parts*, or of the *General* into the *specials*: as to divide *animal* into *man and beast.*

2. *Essential*, which resolves the *whole* into *essential parts*, and this is either of a *species*

o its *Genus* and *difference*, or of some *spe-cal nature* into its *matter* and *form*: as, a *man* to *soul* and *body*.

3. *Integral*, which resolveth the *whole* in-integral *parts*, and this is the division of some *dividual*, either into its *sensible* or *material* rts.

4. *Division* of the *aggregated whole* into its *rts*, and by *accident* is four fold.

1. When the *subject* may be divided by *accidents*: as, *men* are *learned* or *unlearn-d*.

2. When an *accident* may be divided by its *bjects*: as, *feavers* are in the *spirits*, or in the *mours*, or in the *solid parts*.

3. When an *accident* may be divided by *ac-idents*: as, *good* is either *profitable*, *honest* or *leasant*.

4. When things may be divided by their *bjects*: as, *sight* by *colours*, *hearing* by *und*.

6. When *causes* may be divided by their *ffects*, and the contrary: as, *Heavenly heat* from the *Sun*, and *Elementary* from *re*.

The *Canons* or *Rules* are these.

1. *An ambiguous word must be explained be-re it can define any thing.*

2. *Unless the ambiguity be explained in the*

beginning

beginning, the arrow will be afterward the gr[illegible]er.

3. *In the simple dividing of the w[illegible]ole, the members dividing* should be equal to, and [illegible] with the whole.

4. *The members dividing* should be disjoi[illegible] from one another.

5. *Division* doth consist of as few members or parts as the nature of the whole will bear.

6. *In any Division* the whole must be of a la[illegible]ger extent than any one of the parts.

CHAP. III.

Of a Syllogism.

A Syllogism *is an oration in which* [illegible] *things being taken for granted, something else not granted before is proved or inferred from them*; and this is twofold, *perfect* or *imperfect*.

1. A perfect Syllogism *is an argumentation, in which from two premises disposed rightly and according to rule, some conclusion doth necessarily follow*: as *every man is an animal, every thing that hath reason is a man, therefore every rational thing is an animal.*

5. A *perfect syllogism* is twofold, *Categorical* and *Hypothetical*.

4. A Categorical Syllogism *is that in which the propositions are categorical*: and this is also twofold, *Common and Expository*.

5. A common Categorical Sillogism *is that in which the Medium is a common name*: as, *every sound may be heard, every Voice is a sound*, therefore *ever Voice* may be heard.

6. An Expository Categorical Syllogism *is that in which the Medium is a singular name*: as, Socrates *is learned*, Socrates *is an Athenian*, *therefore some Athenian is learned*.

7. An Hypothetical syllogism *is that in which one or more of the propositions are Hypothetical*: as, *if* Socrates *be a man, he is an animal*: *but* Socrates *is a man, therefore he is an animal*.

8. To make a *common Categorical Syllogism* two things are required, *matter* and *form*.

9. The *matter* of a *Syllogism* is either *remote* or *next*.

10. The *remote matter* of a *Syllogism* is the matter of which it is *remotely* made, the three *terms* in every proposition, call'd the *major extream*, the *minor extream*, and the

the *middle term* or *argument*.

11. The *major extream*, is that which is in the *major proposition*, and in the *conclusion*, but never in the *minor*.

12. The *minor extream*, is that which is in the *minor proposition*, and in the *conclusion*, but never in the *major*.

13. The *middle term* or *argument*, is that which is in the *major* and *minor* propositions, but never in the *conclusion*.

14. The *next* or *immediate matter* of a *syllogism*, is that of which the *Syllogism* is *immediately* made; as, the *three* propositions, of which the *first* is called the *major*, the *second* the *minor*, and the *third* the *conclusion*.

15. The *form* of a *syllogism*, is the right disposing of the matter both *next* and *more*; and this comprehendeth two things, *figure* and *mode*.

16. A *figure* is that which shews how the *middle term* may be fitly placed, which may be done *three* waies, or by *three figures*.

17. The *first figure* maketh that which is the *subject* in the *major proposition* to be the *predicate* in the *minor*.

18. The *second figure* maketh that which is the *predicate* in the *major proposition* to be the

dicate in the *minor* also.

10. The *third figure* maketh that which is *subject* in the *major* proposition to be the *predicate* in the *minor* also, according to these flicks.

Both *sub* and *pra* doth the *first figure* use,
Twice *pra* the *next*, the *third* twice *sub* I muse.

20. A Mood *is the disposing of the propositions according to quantity and quality.*

21. There are nineteen *Moods*, of which nine are *perfect*, some *imperfect*. In the *first figure* there are nine, *Barbara*, *Celarent*, *Darii*, *Ferio*: and these *four* are *perfect*: *Baralipton*, *Celantes*, *Dabitis*, *Fapesmo*, *Frisesmorum*: and these *five* are *imperfect*. In the *second figure* there are *four Moods*, *Cesare*, *Camestres*, *Festino*, *Baroco*; and in the *third figure* there are these *six*: *Darapti*, *Felapton*, *Disamis*, *Datisi*, *Bocardo*, *Ferison*: the *Moods* in both these *figures* are all *perfect*, and are so many words of art, which serve onely to denote the *quality* and *quantity* of every proposition, by help of the *vowels* which are in them; A. E. I. and O. And how the *quantity* and *quality* of a proposition may be known by these *vowels* hath been shewed before.

22. And these directions are sufficient for the placing of the *middle terms*, and the right

right disposing of the two *first* propositions a *syllogism* called the *premisses*: the *third* position or *conclusion* may be inferred from them by help of these *moods* two ways, to wit *directly* or *indirectly*.

1. *Directly*, when the *minor extreme* term is the *subject* in the *conclusion*: and the *major term* the *predicate*: and thus the conclusion is inferred in *four moods* of the *first figure* and in all the *moods* of the *second* and *third figures*.

2. *Indirectly*, when the *Major extreme* the *subject* in the *conclusion*, and the *Minor* predicate: and this is in the *five last moods* the *first figure* only, according to these Verses.

All the *nineteen* directly do conclude,
Except of *figure first*, the *last five moods*.

The *Canons* or *Rules* concerning the *matter* and *form* of a *common syllogism*.

1. *From true premisses rightly disposed a true conclusion is rightly inferred.*

2. *A syllogism consisting of pure negatives, or pure particulars in the premisses, no conclusion can be rightly inferred.*

3. *The conclusion is always inferred from the more worthy or weaker parts: and as*

...tive is always more worthy than a negative,
... an universal than a particular.

4. *In every syllogism there must be three terms* ... *no more*: and *four terms* may be either *ex-...ssed* or *implyed* in using a *doubtful* word: for *...very doubtful* word is a *double* word.

5. *Every syllogism either is in the first figure, ...may be reduced thereto.*

Examples of the *universal moods*, in which the *conclusion* is directly inferred in the *first figure*.

Every animal is sensible,
Every man is an animal,
Therefore every man is sensible.

No animal is a stone,
Every man is an animal,
Therefore no man is a stone.

Every colour is visible,
Some quality is a colour,
Therefore some quality is visible.

No vice is placed in the middle,
Some habit is a vice,
Therefore some habit is not placed in the middle.

Examples

Examples in the *second figure.*

Ce *No rich man is poor,*
fa *Every covetous man is poor,*
re *Therefore no covetous man is rich.*

Ca *Every animal is mortal,*
mes *No Angel is mortal,*
tres *Therefore no Angel is an animal.*

Fes *No animal is a plant,*
ti *Something that hath life is a plant,*
no *Therefore something that hath life is not an animal.*

Ba *Every man is an Animal,*
ro *Something that hath life is not an animal,*
co *Therefore something that hath life is not a man.*

Examples in the *third figure.*

Da *Every vertue is difficult.*
rap *Every vertue is honest,*
ti *Therefore something that is honest, is difficult.*

Fe *No stone doth live,*

Every stone doth naturally descend,
Therefore something which doth naturally descend, doth not live.

Some man is a thief,
Every man is a rational creature,
Therefore some rational creature is a thief.

Every man is a living creature,
Some man is wise,
Therefore some body that is wise, is a living creature.

Some Animal is not rational,
Every animal is mortal,
Therefore some mortal is not rational.

No severity is pleasing,
Some severity is good,
Therefore, something that is good, is not pleasing.

CHAP. IV.

Of the Reduction of Syllogisms.

SOme *Syllogisms* which do naturally and evidently conclude are *perfect* and need no *direction*, such are those that are made according to the *four first moods* of the *first figure*, all the rest are *imperfect*, and are to be reduced to these *four*; and the *third proposition* or *assumption* in these *syllogisms* formed according to these *four moods*, doth depend upon *two rules*, the *one* is called, *Dictum de omni*, *spoken of all*; the *other*, *Dictum de nullo*, *spoken of none*.

2. A thing is then said to be *spoken of all*, when that which is universally affirmed of the *predicate* is also affirmed of all his *subjects*; upon this *rule* are these *two moods*, *Barbara* and *Darii* founded.

3. A thing is then said to be *spoken of none*, when that which is universally denyed of the *predicate*, is also denyed of all the *subjects*; upon this *rule* are these *two moods*, *Celarent* and *Ferio* founded. Hence it appears why all the other *moods* are to be reduced to these *four*, because the *assumption*

...ally inferred in them, and because they ...founded upon these rules.

And, Reduction is the declaration, or manifestation, how the conclusion in any imperfect mood, is inferred from the premisses by reduction to some perfect mood, or some other part of the conclusion.

Reduction is twofold, *Direct* or *Indirect*.

1. *Direct reduction* is, when we ... of the *second* or *third figure* ... some *syllogism* of the *first*, by *converting* ... or both of the premisses, or by *transposing* them, or by *conversion* and *transposition* ...

2. *Indirect Reduction* is, when we ... the adversary to *confess* some *absurd* or *impossible* thing.

The manner how both these kinds of *reduction* must be performed, will be easily understood by considering the *Consonants* in the *beginning* and *middle* of those *Words*, which are to be *reduced* to the *words* of the *first figure*.

The *Consonants* in the *beginning* of the words are these four, B. C. D. F. and shew with which *words* of the *first figure*, every of the *second* and *third figure* is to be reduced; namely to that, which doth begin ... the same letter; all the imperfect *Words* ...

therefore which begin with B, must be reduced to *Barbara*; those which begin with C, to *Celarent*, Those with D, to *Darii*, and those with F, to *Ferio*.

8. The *consequents* to be observed in the *middle* of the *Moods* are these *four*. S. P. C. and shew by what *instrument* the *reduction* is to be made, whether by *Conversion*, *Transposition*, or *Deduction* to some absurd or impossible thing. S. sheweth that that proposition in which it is found must be *converted* by *simple conversion*. P. noteth that the proposition must be *converted* by *accident*. M. notes that the premisses must be *transposed*, that is, the *Minor* into the place of the *Major*, and the *Major* into the place of the *Minor*. C. noteth that the *Reduction* must be made by some absurd or impossible thing.

According to these distichs,

"S. The letter S, *simple conversion* notes,
"But P, for *accident* doth spend its voice.
"The letter M, doth *Transposition* use.
"C, notes that you th' *apparent* must abuse.

9. *Indirect reduction*, or *reduction* by the adverse to some absurdity hath place only in these two *Moods*, *Baroco* of the second *figure*, and *Bocardo* of the *third*; and

the first must regard, two things must be
served.

If *Baroco* be to be reduced, the *Minor*
position must be contradictory to the
clusion: if *Bocardo*, the *Major* proposition
be contradictory to the *Conclusion*.

If *Baroco* be to be reduced, the *Major*
shall be the same; but if *Bocardo* the
according to these distinct

The *Major* keep *Baroco* to reduce,
and keep the *Minor* for *Bocardo*'s use.

CHAP. V.

Of an Imperfect Syllogism.

AN imperfect Syllogism *is a Syllogism that*
hath some defect, either in the number of
premisses, in the disposure thereof, or in the in-
ference from them; and is fourfold: 1. *Enthy-*
meme. 2. *Induction*. 3. *Example*. 4. *Sorites*.

An Enthymem *is an imperfect Syllogism,*
having the conclusion drawn from the proposition
and assumption, or assumption and proposition,
whereof one is understood, therefore not
called a part.

In which these three things are to be observed.

1. In an Enthymeme the first proposition called the assumption, the other the consequence. If the Premises be in the assumption, the former inverting; if the latter be in the assumption and consequence, the former is assuming.

3. An Enthymeme is a perfect Syllogism in respect of the first proof, and imperfect in respect of the evidence to the understanding, the premisses being understood, not expressed.

2. An induction *is an imperfect Syllogism* in which from many singulars some universal conclusion is inferred; as, this man is a living creature, and that man is a living Creature, so of the rest, *therefore every man is a living creature.*

In an *Induction, four* things are to be observed.

1. By singulars we are not only to understand individuals, but also universals, as in respect of Genus &c. and all inferiors in respect of the whole.

2. If the enumeration of all the singulars fail, the induction will be false.

3. In the most common instrument to find out *arts.*

An *Induction* may be reduced to an *Syllogistical Syllogism*. If Peter [illegible] &c. then every man is [illegible] &c. Socrates, &c. *is rational, therefore, &c.*

Example is an imperfect Syllogism, *drawing from one or more singulars, the nature of particulars*; as, Catiline *was punished for sedition, therefore* [illegible] *ought to be punished.*

In an *Exemplary Syllogism* [illegible] are observed.

An *Exemplary Syllogism* is an imperfect [illegible]

In every *Exemplary Syllogism* there are [illegible] and therefore cannot be immediately reduced to a *perfect Syllogism*.

An *Exemplary Syllogism* is but of little force to *prove* a thing, but of great force to *persuade*.

In an *Exemplary Syllogism* this General [illegible] is much observed in the inference: that, *like doth agree with like*.

Sorites is an imperfect Syllogism, in which from four or more premisses, we infer a conclusion, in which the first subject is joyned with the last predicate: as, *Socrates* is a man, a man is a living creature, a living creature is a body, a body is a substance, therefore *Socrates* is a substance.

And in this kind of *Syllogism*, *three* thi
are to be observed.

A *Series* containeth as many *S*
as there are *terms* between the *s*
of the *first* proposition and the *predicate* of
last.

A *Series* may be resolved into *Syllog*
of the *first figure*.

A *Series* is in use only, in such *terms*
are necessarily subordinate, in a *causal* or a
discursive subordination. This way of a
ing, is grounded upon the *first Antepredica*
rule.

And thus much concerning a *Syllogis*
the General, and the several kinds, or *s*
thereof.

CHA

CHAP. VI.

Of the first Definition and Præcognita of Demonstration.

1. Come now to speak of a *special* or *Material Syllogism*, as it is restrained to certain conclusions of matter.

2. A *Special* or *Material Syllogism*, is of three sorts. *Apodictical*, *Dialectical*, and *Sophistical*.

3. An *Apodictical Syllogism*, otherwise called a *Demonstration*, may be defined two ways, either from the *end*, or from the *matter* of *demonstration*.

4. From the *end* of *Demonstration* an *apodictical Syllogism* may be defined. Demonstration *is a Syllogism begetting knowledge, or making to know.*

5. *Demonstration* among *Geometricians*, is a *Delineation* by *Diagrams*, in which, the truth of their propositions is exhibited unto the eye: but amongst *Logicians* it is sometimes taken for every *certain* and *clear proof*: and here it is strictly taken for a *Scientifical Syllogism.*

6. The *Genus* in this definition is *Syllogism*, in which it agreeth with *Dialectical Syllogism*. The *difference* is taken from the end, which is *science*.

7. This word *science* may be taken three ways, *largely*, *strictly* and *most strictly*.

1. *Largely*, for every *cognition* or *true assent*.

2. *Strictly*, for *firm* and *infallible assent*.

3. *Most strictly*, for the *assent* to such propositions as are known by causes and effects. *Firm* and *infallible cognition* is either by *sense*, and so we know that the *sun doth shine*; or by *understanding*, as when the question is concerning *universal propositions*, concerning the truth of which *sense* is not able to judge: but the *cognition* of *universal propositions* is attained by, or without a *syllogism*.

8. *Cognition* is begotten without a *syllogism*, when full assent is given to a proposition for the clearness of it in its self without any proof. Thus we know that the *whole* is *greater* than any *part* thereof: that *God must be worshipped*, and such like. This kind of *Cognition*, *Aristotle* calls *intelligence*, and *faith* it is distinguished from *science* in this, that *science* doth proceed from *reason*; but for as much as *reason* may be brought from several heads, that *cognition* here called by the name of *science*, which

...ge either by the *senses* or by the *...*
...lation is the most first reception of ...
...ent, and proper to this place.

Or thus; *Science is a certain knowledge of conclusions, to which we assent for the preceding knowledge of the premisses*; and for *premisses* in every *science* are alwaies three; *...*, the *affection*, and the *medium*; by which ...demonstrated, that the *affection* is in the *...*

10. The *Question* to be demonstrated is composed of the *subject* and the *affection*. The *premisses* by which the *Question* is demonstrated, are made, first, by joyning the *medium* with the *affection*, and then by joyning the same with the *subject*. In all these, *...* are to be considered, the *praecognitions* which precede the demonstration, and the *conditions* which are to be observed in the demonstration.

10. The *Praecognitions* are, two. 1. That the thing is. 2. *What it is*. In these *praecognitions*, the things which are *evident* and *obvious* unto all, are so in the understanding only; but the things which are not so *evident*, but that they may be ..., are expressed in the very beginning of ...

19. And if being delivered by the learner that ...

...ssed

...ly follow them, they are properly call...
...stions; but if the learner either doubt...
...ion, or be of another opinion, they are ca...
...questions, or things to which an assent ...
...quired.

4. The first of these precognitions, viz. the Quid sit, What the thing is, includeth two things. 1. That the thing sought hath a true existence, and this answereth to the Question, Is there such a thing? 2. That the thing sought be is the true predicate in a subject.

5. The other of these precognitions, namely the Quid sit, What is it? doth also include two things. 1. The name, or what the signification of the name is. 2. The nature of the thing, that is called by that name; so that from these two precognitions, four questions do arise; of which two are simple and two

6. The simple questions are those which do equally agree to accidents and to substances. The first is made concerning the existence or existence by asking An sit? whether it is or no? The second maketh inquiry concerning the nature of it, and asketh, Quid sit, what it is?

7. The compounded questions chiefly agree with accidents: the first asketh, whether the accidents be in the subject? or, whether ... exist,

ble? The *other* asketh, *why the predicate belongeth to subject?* as, *why is man risible?*

18. Of these *four questions* the *third* hath such reference to the *fourth*, as the *first* hath to the *second*; for then in *simple terms* when we know they have *being*, we ask *what the things are?* and in propositions, when we know they have a *being*, we inquire, *Why they are?*

19. After these *precognitions* and *questions* the three *precognita* are next to be considered, namely the *subject*, *affection*, and *cause*.

20. The *subject* is a *simple term*, or *first extreme* in the demonstration, concerning which, some *accident* is demonstrated by its *next cause*; as, *a man*: concerning whom we must both know, *that he is*, *and what he is*: *first*, *that he is*, or otherwise we seek the knowledge of him in vain, for there is no knowledge of a thing, that *is not*: and then we must also know, *what he is*, not onely in respect of his *name*, but also of his *nature*, for that must be the *medium* of the demonstration: and we must know the *medium*, at least confusedly, before we can infer the *conclusion*. The *precognition* of the things *existence* is called the *Hypothesis*; of its *nature*, the *definition*.

21. *Passion* is a *proper Accident* which is demonstrated

Of the Conditions to be observed in a perfect Demonstration.

A *Demonstration* is to be considered, either in respect of the matter, or in respect of the form.

1. In respect of the *matter*, one kind of Demonstration sheweth, *why* the predicate is in the subject; and that is either the before demonstrated *form*, or *efficient* of the subject.

By an *immediate antecedent* cause, this is either *final* or *efficient* by some *over-ruling* cause.

Another kind of Demonstration is of the *matter*, shewing that the predicate is present in the subject, and that either by it self, or by some *remote* cause.

2. A *Demonstration*, in respect of the *form* to be considered,

1. In *quantity*, and so it is *universal*, or *particular*.

2. In *quality*, and so it is *affirmative* or *negative*.

3. In

3. In the *manner* of the proof, and so it is either an *offensive* demonstration, or a demonstration *reducing* to some impossible thing.

5. In the *first* of these kinds of demonstration called the demonstration *That it is*, the conditions to be observed partly belong to the *question*, partly to the *cause* or *medium* of the demonstration, and partly to the *premisses*.

6. Every *question* doth not admit of the first and most perfect kind of demonstration called *why a thing is*: but such a *question* only as is true, and hath a *certain* and *immediate* cause of its own truth.

7. The *conditions* to be observed in the *premisses* of a demonstration, are *absolute* and *relative*.

8. Those are said to be *absolute conditions* which are suitable to the *premisses* considered absolutely and in themselves; and those are said to be *relative conditions*, which are suitable to the *premisses* in reference to the *conclusion*.

9. The *absolute conditions* are two. The *first* is, that the propositions be *necessary* and *true* and *reciprocal*: The *second* is, that they be *immediate* or *first*.

10. Demonstrative propositions must

(for that which is *false* cannot be known,) they must be *necessarily* so, for from propositions *not necessarily true*, no *necessary conclusion* can be inferred, unless by *chance* or *accident*, and they must be *necessarily true* in the highest degree, that is, they must be *reciprocal*. For they contain the *next cause* or the *reason*, which is such as that it is *reciprocal* with its *effect*.

11. A proposition is said to be *immediate* two ways. 1. In respect of the *subject*, when there is no more *immediate subject* between the *predicate* and the *subject*; as, *a man is rational*, *a man is visible*. 2. In respect of the *cause*, when no more *immediate cause* doth intervene between the *predicate* and the *subject*; as, *that which is rational is visible*: *a man is rational*.

12. In a *most perfect* demonstration, where the *middle term* is the *material* or *formal cause* of the *subject*, and *efficient* of the *passion* by emanation, the *major* proposition is *immediate* in respect of the *cause*, but not of the *subject*; as *that which is rational*, *is visible*. The *conclusion* is *immediate* in respect of the *subject*, but not of the *cause*; as, *a man is visible*. The *minor* is *immediate* in respect of the *cause* and the *subject* both; as, *a man is rational*.

13. In

13. In a *mixt* [illegible] demonstration, [illegible] the *middle terms* are the *remoter causes* of [illegible] though both the *minor* and [illegible] be *conclusions*; yet the *minor* is not [illegible] *minor* in respect of the *cause*. This happ[illegible] in every other demonstration from the [illegible] as allowhere we proceed [illegible] *conclusion* precedemonstrated, to the de[illegible] of another, such as are all [illegible] for the most part yet [illegible]

14. The *premises* conditions to be [illegible] in reference to the *conclusion* are [illegible] that the *premises* be the *causes* of the [illegible] that they be *before* [illegible] be *more known* than the *conclusion*.

15. The *premises* may be said to be [illegible] *causes* of the *conclusion*, as the *medium* is [illegible] why an *affection* is not only the [illegible] why the *conclusion* is known; but the [illegible] is seen; and as the *medium* is before [illegible] not as *seen* but *natures* for the [illegible] the *premises* is *first* in nature, *before* [illegible] of the *conclusion*. *Lastly*, as the *[illegible]* is *more known* than an *affection*; not [illegible] confused knowledge and in respect of [illegible] but by a distinct knowledge; and accordi[illegible] to nature, so are the *premises more known* than the *conclusion*: because we by reason

receives the knowledge with full
of mind, we must needs assent to
to the proof or for according
Aristotle, That for which another is such as
is by it self, however such. Like as
to the Premisses of two sorts, viz. one
also: for the question is not
proposition
be ignorance, that
being known.

A. The first is proposition, which
sufficiently appear by himself
of the words, but by his judgment
Definitions are
A Definition is that, which
which
Sometimes it falls out that
The medium of
for this
first, such that
Axioms
other absolutely, or in his own kind
understood to be the next absolutely, that
without which that effect cannot be

For as much as these are *four* kinds of [illegible] and in every kind [illegible] one the *more* [illegible] causes, there is but one, that is [illegible] *absolutely*.

22. Moreover it is required that this *more* should be the *cause* of the *predicate*, but it is necessary that it should be the *cause* of the *subject* also: for the question is not, whether there be a *subject*? for this is supposed: but whether there be a *predicate*, or whether it is inherent in the *subject*?

23. This *more cause* must be either the *efficient* or the *final*: for when the *predicate* [illegible] is such neither *matter* nor *form*, so called. The *final cause* is [illegible] in those things which are made for other [illegible] as are *medicines* and *natural instruments* also and *behaviour*, if any such can be [illegible] The *efficient cause* is used in the rest. Sometimes it falls out that the *efficient cause* is also the *form* or *matter* of the *subject*, and these kind of demonstrations [illegible] the most excellent, but do not make a different *species* of themselves, but these things will be more clearly understood by the examples following.

1. *Every rational creature is capable of knowledge.*

Every

Every man is a rational creature,
Therefore every man is capable of knowledge.

In this demonstration the *medium*, *rational*, is the *internal efficient cause* of the *predicate*, and *form* of the *subject*.

2. *Every terrestial thing doth sink in water,*
Ebene is terrestial,
Therefore Ebene doth sink in water.

Here the *medium* is the *internal efficient cause*, and *matter* of the *subject*.

3. *Whatsoever doth consist of matter and form hath three dimensions.*
Every body doth consist of matter and form,
Therefore every body hath three dimensions.

Here the *medium* is the *internal efficient cause* of the *predicate*, and both the *form* and *matter* of the *subject*.

4. *That which hath three dimensions, will not admit of another body in the same place, while it is self.*
But every body hath three dimensions,
Therefore, &c.

Here the *medium* is the *internal efficient cause* of the *production*, and *property* of the *subject*.

3. *That which by the interposition of the earth cannot be enlightened by the Sun-beams, suffers an eclipse of the Sun-light.*

But the Moon, the earth being interposed cannot be enlightened by the Sun-beams,

Therefore the Moon, &c.

Here the *medium* is the *external efficient cause* of the *production*.

6. *Whose is made for the contemplation of Heavenly things, ought to have his conversation*

Man is made for the contemplation of Heaven

Therefore &c.

Here the *medium* is the *final cause* of the *disease*.

24. Sometimes it so comes to pass, that one and the same question may be demonstrated both by the *efficient* and *final cause*, as you may demonstrate that a Body

doth sleep, either because the common ... is overcome by vapours, and that the ... of the external senses are obstruct... and this is a demonstration from the ... cause; or that the animal spirits may be ...shed and strengthened, and this is a de...nstration from the *final cause*.

CHAP. VIII.

Of an *Imperfect Demonstration*, or the *Demonstration, What*.

HAving hitherto spoken of the *principal Demonstration*, or the Demonstration *Why?* the next is the *less principal*, or the Demonstration *What?* and which leaveth an imperfect knowledge, and is twofold; the one is from the *effect*, the other from a *remote cause*.

The *first* of these collecteth the *cause* from some *sensible effect*; for example:

Everything that is sensible is rational.
Every man is sensible.
Therefore every man is rational.

Here

More the *medium* is the *next effect*, and *proximate* is the *cause* of the conclusion.

2. The *second* of these demonstrations [illegible] *effect* from some *remote cause* [illegible] example.

That which hath not a sensitive soul doth not breath,
A Plant hath not a sensitive soul,
Therefore a plant doth not breath.

3. A Demonstration from the *effect* [illegible] *affirmative* in *Barbara*, and sometimes *negative*, though seldome, in *Camestres*.

4. A demonstration from a *remote cause* [illegible] *negative*, very seldome *affirmative*, and consequently is restrained to the *third* figure in *Camestres*: for example.

Every visible thing is an animal,
No tree is an animal,
Therefore no tree is visible.

5. Demonstration from the *effect* is more excellent than from a *remote cause*.

1. In respect of the *form*, the one being *affirmative* in *Barbara*, the other *negative* in *Camestres*.

in respect of the *matter* for in the one the propositions are most *necessarily true*, and differeth nothing from the *most perfect* Demonstration, but in placing of the terms, and hath a perfect knowledge, not simply, but in a kind: but the Demonstration from the *more causes* is made of *less necessary*, and not immediate propositions, nor doth it beget a knowledge that is perfect in its own kind, and with which the mind may rest satisfied; yet both of them are so perfect, that they are either of them sufficient to beget such a knowledge as give us satisfaction of the being, or not being of a thing.

G CHAP.

CHAP. IX.

Of Demonstration in Respect of form, and of the Affections of most perfect Demonstration.

HItherto we have spoken of the kinds of demonstration in respect the *matter*, we are now to speak of them respect of the *form*.

2. The *form* of a demonstration is p discerned from the *quantity*, partly from *quality*, and partly from the *manner* of *proof*.

3. The *form* of a demonstration in spect of the *quantity* is *universal* or *par lar*.

An *universal* demonstration is that which *an affection is demonstrated of the fir adequate and universal subject by an immed cause*; as when we demonstrate *visibility man*, by his *rationality*, and all the *mo fect* demonstrations are of this kind, *Wh thing is so*. And a Demonstration pro from the *effect*, *That a thing is*, is of this also.

A *Particular* demonstration, (not so called if the *terms* were *particular*,) is a demonstration in which an affection is assigned to an inadequate and a less universal subject, or to one part of the first subject only; as when I demonstrate a man to be *sensible*, by his *reasonable soul*.

The *form* of demonstration in respect of *quality*, is *affirmative* or *negative*.

An *affirmative demonstration* is that in which the *conclusion* the *predicate* is affirmed of the *subject*, which happens in all demonstrations, save the particular, which is sometimes negative.

A *Negative Demonstration* is that in whose conclusion the predicate is denied of the subject.

Every thing that breatheth is an animal.
A wall is not an animal.
Therefore a wall doth not breath.

And this doth often come to pass in the demonstrate *That*, from a remote cause; it may happen in all other demonstrations, though very seldome, and that by consequence only; for an affirmation is before negation, both in reference to the thing and knowledge of it.

The form of a demonstration in reſp
of the manner of the proof, is either oſte
or by reduction to impoſſibility.

An Oſtenſive Demonſtration is that, in wh
the concluſion is evidently and directly infe
from former and more known premiſſes, &c.
which ſort are all the before named kinds
Demonſtration.

A Demonſtration by reduction to impoſſi
is when from granted premiſſes we prove
concluſion to be therefore true, becauſe
contrary is apparently falſe; for exam

Every rational thing is riſible,
Every man is rational,
Therefore every man is riſible.

Here if the major be denied, we may
convince the reſpondent to an abſurdity
taking the contradictory of the major
thus,

No rational thing is riſible,
Every man is rational,
Therefore no man is riſible.

Wherein the major in the former ſyllo
and the concluſion were both true;

e two contradictories are together true
false; and this kind of Demonstration is
e meanest of them all.

But here we must observe, that an *uni-*
rsal contrary proposition is rather to be
n, than a *particular contradictory*; both be-
use *particular* propositions have no place
demonstration, as also because *contrary*
opositions in *necessary* matter, stand in the
ace of *contradictories*. *Zabarella, lib. 2.*
cap. 17.

And thus having done with the *kinds* of
monstration; I come in the next place to
ak of the *affections* of the effect and most
fect demonstration, and they are chiefly
Analysis, Regressus, and *Conversio* or
Demonstratio.

Analysis *is the resolution of effects into*
their first causes to beget a perfect knowledge
thereof; for when there is a certain chain and
subordination of efficients, and effects, al-
though the latter may be demonstrated by the
former, yet the mind is not reached in that,
but inquireth further for the cause of that
effect also, and so forward, to the first cause
which is the *form* of the subject, of which
cause can be given, and in which alone
mind is satisfied; as, if *Augustus* in

all things living were demonstrated by *sensation*, and that again by the *vegetative faculty*, and that by the *soul*.

1. Regressus *is the reexpostulation of the cause and effect by demonstration*: which *effect* we reexpostulate by that *cause*, by which the said *effect* was it self demonstrated: *Regressus* or *power* is called *Regressus*, because after our understanding hath proceeded from a kind of confused and experimental knowledge of the *effect*, as nearer to sense, to the confused knowledge of the *cause*, [illegible] that knowledge by often [illegible] and comparing of the [illegible] the *effect* till it come from a confused knowledge: then it returns from that distinct knowledge of the *cause* to the like distinct knowledge of the *effect*. This is therefore made by the demonstration *quia*, and by an after demonstration, in such respect unto the confused knowledge of the *cause* by the *effect*. But *regressus* is by demonstration *why*, and by a former demonstration, and hath respect unto the distinct knowledge of the *effect* by the *cause*, which differs from that vitious demonstration, which they call a *circle* in *three* things.

1. In the *form*; for a *circle* doth from the *effect* demonstrate the *cause*, and from

the *conclusion* put into the place of the *Major* and the *Minor* simply converted; it doth again demonstrate the *Major*; then again the same *conclusion* put into the place of the *Minor*, and the *Major* simply converted in the place of that, it doth demonstrate the *Minor*; which any one, that will, may experiment by this instance.

Every rational thing is risible,
Every man is rational,
Therefore every man is risible.

But in *regress* we onely demonstrate the *Minor*, from the *major* simply converted, and the *conclusion* put into the place of the *Minor*. And so there will be a *natural* predicament in every proposition, the which is not a circle.

2. In the *Matter*; for the *matter* of a *circle* the *middle term* is uniform in both the demonstrations, seeing it is the *next cause* of the *two extreams*, proving *why a thing is*, but in *regress* the *effect* doth first demonstrate, *that there is a cause*, then after consideration had about the *cause*, the *cause* doth demonstrate *why there is an effect*.

3. In the *end*: for in a *circle* the same thing is both *beginning* and *end*, seeing it proceeds from

from a *cause* distinctly known, to a *cause* ...
distinctly known, and returns from *this* to ...
but in *reverse*, the *end* is a distinct knowl...
of the *effect*, and the first *progress* is from ...
effect confusedly known to a *cause* to be ...
confusedly known; but from a *cause* confus...
known, consideration being had, we ...
to the distinct knowledge of the *cause*, ...
from that once habituated and radicated ...
the understanding, we return to the distinct ...
knowledge of the *effect*.

3. *Conversion* of a demonstration into a *definition* is, when from the terms of a ... demonstration, the *definition* of a *proper* ... is framed by *transposition*. And the ... *definition* by a *perfect division* is twofold.

1. *Partial*, and that is either

Nominal, which consists of a *Genus* and ... *subject*; as, *an Eclipse is the defect of light* ... *the Moon*.

Causal, which is the *middle term* in ... *most perfect* demonstration, shewing, ... *there is such effect*; as, *an Eclipse is the interpo-* ... *tion of the Earth*.

2. *Total*, which being made of the *nominal* ... and the *causal* both, doth consist of a *Genus* ... *subject*, and the *next cause*; as, *an Eclipse* ... *the defect of light in the Moon, by reason of the* ... *interposition of the earth*.

A verbal definition is the conclusion of the demonstration; the causal is the beginning: both of them is an entire or whole demonstration, differing nothing from it, but the placing of the terms: for the thing defined is the greater extream, the first extream the subject, and the cause the middle term.

CHAP. X.

Of a Topical Syllogism in the General.

Hitherto we have spoken of a demonstrative Syllogism, whose matter is necessary, and the end a perfect knowledge; come we now to a dialectical or topical Syllogism, whose matter is probable and contingent, and the end opinion.

2. In a dialectical or topical Syllogism we consider of Problemes, Propositions, and the invention of arguments.

3. A Probleme or Question is that which is probably disputed, and the matter of a Syllogism already made. But that Probleme may be dialectical, two conditions are required.

4. That is said to be *probable*, which not being *absolutely true*, doth rather *seem* to be true, than *false*. There are *five degrees* of *probability*: for that is said to be *probable* which *seemeth to be true*, either to *all*, to *most men* or to *wise men*, and that either to *all* of them, or to the *most*, or to the *wisest* of them.

7. That is said to be a *Paradox*, which is *true*, though *contrary* to the *vulgar opinion*.

8. For the *invention* of arguments, we are to consider common *places* and *rules*.

9. A *place* is a *sense* or *common note*, by whose help an argument is found.

10. A *Rule* or *Canon* is a proposition containing the *reason* of the consequence in a *dialectical Syllogism*.

11. *Arguments* are of two sorts, *artificial* and *inartificial*.

12. *Artificial arguments*, are such as from the consideration of the parts of the *problem*, are not found but by *rules of art*.

13. *Inartificial arguments* are such as are found without any help of art, and these are nothing but *testimonies*.

14. Several men do reckon the order of their *heads* or *places* severally. Aristotle reduceth all *heads* to the *four predicables* mentioned

named before; some for the more plain and distinction, reckon up seven and five and this number some contract to thirteen others to ten: and perhaps they may without any inconvenience be reduced unto seven:

1. The Cause and the Effect. 2. The Subject and the Accident. 3. Difference and Comparison. 4. Conjugates and Notation. The whole and its parts. 6. Genus and Species. 7. Definition and Division. In every of these places, I will in the proposed order shew you the Cases to be observed, and the restrictions of them.

CHAP. XI.

Of the Topicks from the Cause and the Effect.

THere are four kinds of Causes, efficient, material, formal, and final; there are several subdivisions of them, but these following are the most convenient to our purpose.

1. Whether the Cause be the cause of the thing, and part of it, or the cause of a thing without existence of it, but

into

a cause actually, as the builder is the cause of the house: and a cause potentially, as an architect may build an house. 3. Into one cause, as a stone may be the cause of a house; and the next cause, as cruditie in the stomach, is the cause of sickness. 4. Into a cause simply and by it self, as the Sun is the cause of light; and a cause by accident, as the Sun of blindness.

The *Canons* or *Rules* of this *Topick* are these.

1. If the cause being granted, the effect cannot be denied: and, if the cause be taken away, the effect is taken away also: as, if the Sun shine, it must be day; if the Sun doth not shine, it is not day: the *former* part of this Canon hath its limitations.

1. In a *remote cause*: as, he that drinks wine is not *always* made drunk. 2. In a cause *that is obstructed in its operation*: as, many things do not *always* descend, because they may be hindered by some thing that withholds them up. 3. In a *cause by accident*: as, he that diggeth in the earth doth not always find Gold. 4. In a *cause not sufficient of it self to act*, he is not always learned that is industrious; nor this ground always fertile, that is well tilled: because to

both these more is required.

The *latter* part of this *Canon* hath three limitations. 1. In *a cause by accident*: as, he that doth *not* dig into the earth may find a treasure. 2. In *a cause that may, but may not*: as, a building *may* stand, though the Architect be dead. 3. *An effect that may be produced by diverse causes*: as, *Socrates may* dye, though he doth not drink Poyson.

2. *The effect being granted, the cause is so granted, and the effect being taken away, the cause is taken away also.* The *first* part of this *Canon* hath *three* limitations. 1. *In effect by accident*: as, a treasure *may* be found though the earth be *not* digged. 2. *In effect that doth remain after the cause*: as, a house *may* remain, though the builder be dead. 3. *In an effect that may be produced by diverse causes*: as, a man *may* dye, though *not* by poyson. The *latter* part hath *three* limitations. 1. *In an effect by accident*: as, a man *may* dig in the earth, and *not* find a treasure. 2. *In an effect that may, but is not*: as, a building *may* be destroyed though the builder be living. 3. *In an effect produced by a several cause*: as, there *may* be an Impostor slain though he doth not counterfeit.

3. *Se-*

3. *Such as the cause is, such is the effect, and contrary*: as, if the *tree be good*, *the Fruit will be good*; and the contrary: *both* parts of *Canon* have *two* limitations. 1. *In aequivocal causes and effects*: as, the *draught* may be beautiful, though the *painter* be deformed. *In a material cause*, for some thing that is *material*: as *ice* is not fluid because *water* is so.

4. *That for which any thing is such, is much more such it self*: as, the *air* being *hot* by reason of *fire*, doth argue that *fire* is *much hotter than air*.

This *rule* faileth. 1. Where *both* are not *such* as *wine* which maketh a *man drunk*, is not *it self more drunk*, because *drunkenness* cannot be said to be in *wine*. 2. Where both not receive *more* and *less*, as, a *father* is not *more a man* than a *son*; although he be the *cause* why the *son* is a *man*: for *humanity* doth not receive *more* and *less*. 3. Where the *cause* is not *sufficient* of it *self*: as, a *Master* which maketh his scholar *learned*, is not always *more learned* than his *scholar*: for by ingenuity and industry it sometimes comes to pass, that the *scholar* is *more learned* than the *master*.

5. The *cause* is *understood before the effect*, as a reason before *assent*; and this never faileth

faileth. For a final cause in which it [illegible] seems to fail, although it be in act and [illegible] stow after the effect, yet it is before it in the [illegible] reason of the agent, for which only reason is the cause.

CHAP. XII.

Of the Topicks from the Subject and the Accident.

WE do not here take the subject for [illegible] substance in which the accident is inhe[illegible] an accident for that which doth precisely [illegible] adequately adhere to the substance; but [illegible] is here taken for all that, to which [illegible] belonging to its essence is accident. An accident is here taken for every such [illegible] as, number is the subject of equality, [illegible] ing it is an accident of an accident.

An accident may be divided many [illegible] and so may a subject, for an accident [illegible] either proper or common. 2. Separable or [illegible] rable. 3. Inherent or internal and [illegible] ternal. 4. And chiefly it is either [illegible] or meerly doth accompany a subject, [illegible]

…rain, and all *prognosticating signs*: The…
…, as an *Eclipse* of the *Full-Moon*,
…*consequens*, as, a *day*, to the *night*;
and *circumstances* do also belong to this
…ick.

The *Canons* or *Rules* are *five*.

1. *The subject being granted, the proper ac-*
…dent is also granted; and *being taken away*,
proper accident is taken away also; and the
…trary; as, *if he be a man he laughs*, and
…contrary; and *if he be not a man, he is*
…*ther*, nor the contrary. This rule no…
…faileth by reason of the reciprocation
…*subject* and the *proper accident*.

The subject being granted, the *contrary*
…ent is also granted, but *not* the contrary:
…be snow, it is white: but *if it be white*
…not therefore snow. The first part of
…rule faileth in *separable accidents*; as *if*
…ware it is not therefore cold. And the
…part faileth; 1. In a *proper accident*,
…trary; as, *if there be knowledge there*
…*…h individual accident*; as
…*…there is snow*; be-
…an accident doth not change its *sub-*

A common accident being taken away,
…*…taken away*; but not the contra-
…*if it be not white it is not snow*,
but

but yet there may be white, though there
snow. The first part faileth in a separa
ciden, the latter in a proper accident, the
way: and in an individual accident and
as in the former rule.

4. The thing being granted, the ci
stance of time and place is granted, and
circumstance being taken away, the thing
be away: as, if Milo did kill Clodius,
Milo was living and present: if he was
living, or present he did not kill him. This
never faileth in any requisite circumst
cessarily.

5. The antecedent, concomitant, and cons
being granted, the consequent, concomita
antecedent for every existence is also gra
to wit a concomitant in being, an antec
in being, or that hath been, a consequent
ing, or that will be, and being taken away
other is taken away also; as if there be
cipe there is a full Moon: if there be
there was a conception: if there be a
the Sun will rise. This rule faileth,
a thing not cohering necessarily: as he
is a Philosopher, must not of necessity be th
fore poor: and if there be a Comet, it doth
follow there must be war. 2. In
cohering necessarily, if there be not a
necessity; for though it be true, that if

in Eclipse there is a Full Moon: yet it
not follow that if there be a Full Moon
must always be an Eclipse: yet these
not necessary are of great force to be-
belief, especially if many of them shall
joyned together in one: Hence Morals,
Physicians, and Orators do highly
this Topick, in questions of that expe-
ly.

CHAP. XIII.

The Topicks from Dissentany and Comparison.

Dissentanies are either *Opposites* or *Dissi-*
rates; as, a *Horse* and a *Bull*. There are
kinds of *Opposites*, of which, *Book* I.
19. *Comparisons* are either in respect
quality, as *like* and *unlike*, or in respect of
quantity: or also of *degrees*, as *equal* and *unequal*:
and whatever may be said to be *more*
less and *equal*. All which have their several
or *Canons*.

Concerning *Relatives opposition* the *Canon*
one of the relatives being granted, the other is
granted also, and one being taken away, the o-
ther

thor is taken away also: as, if there be a father, there is a *father*, &c. This *rule* faileth in *accidental relations*, as it being granted that there is something *knowable*, it doth not follow that there is a *knowledge* of it, or it be understood of the same *subject*: as that which is the *father* of this man may not be all, but it is impossible, that he should be a father of him, of whom he is the *father*.

Concerning *contrary opposition* the Canons are these following.

1. *One of the contraries being granted, the other is taken away*: as, if water be warm, it cannot be cold. This rule faileth in two *qualities*, for the water which is hot to the Greek, is cold to two: because this two-fold quality is always by admission of the contrary.

2. *One of the contraries being taken away, the other doth remain*: as, if water be not warm, it is cold. This rule faileth 1. *In mediate contraries*, as, Honey is neither white nor black, nor any colour. 2. *In an incapable subject*: as, Snow is neither white, nor black, nor any colour, nor cold.

3. *Contraries have the same Genus, and differ*: as, if white be a colour, black is a colour also; if love be a commendable faculty, so is hatred. This rule never fails.

4. Contra-

Contraries have contrary *causes*, *effects*, *adjuncts*, and *next subjects*; as, *if grief be to be shunned, pleasure is to be followed*; and *if cold congeals, heat dissolves*. This *rule* faileth; 1. In the *predications* of a *Genus* or a *Generical Division*; as, because *whiteness is a colour* or *a quality*, it doth not follow that *blackness is not so*, or *is not a colour*. 2. If the *nature* of the *subject* will not bear it; as, because *health* is agreeable to living creatures, it doth not follow that *diseases* are agreeable to things without life, but rather the contrary. 3. In *causes* by *accident*; for if a *good man* doth *love* and *defend* his Children, it doth not follow that a *bad man* must therefore *hate* and *destroy* them, because to *love* his children, is nine months *virtue*, as *nature*. 4. In *causes* whose *effect* is determined by the *disposition* of the *matter*; for *cold* doth not therefore *soften dirt*, because heat doth make it *hard*. 5. [illegible] *The contrary of a greater good is a greater evil*, and the contrary; as, *because riches is a better then riches, therefore sickness is worse then poverty*. This *rule* faileth where one of the *good things* is included in the *other*, or *opposed by it*; as, *it is more advantageous to be a Philosopher then to have riches*; but one of the two, *Philosophy* may be [illegible]

The

The *Canons* of *private opposition* are two.

1. *The habit being granted, privation taken away*, and the contrary: as, *if a man doth see, he is not blind: if he be blind, he doth not see.* And this *rule* never faileth.

2. *The habit being taken away, privation granted*, and the contrary: as, *he doth see; therefore he is blind. He is not blind; therefore he doth see.* This *rule* faileth in an *incapable subject*: as, *a stone doth not see*, and yet it is not *blind*. 2. In a *capable subject*, before the time in which it is capable: and therefore though a *whelp* doth not see until it be nine days old, yet cannot it be said to be *blind*.

Of *contradictory opposition* there is *one* and only never failing *Canon*; *One of the contradictories being granted, the other is taken away, and one being taken away the other is granted*: as, *if a wall be white*, it cannot be said, it is not *white*; *if it be not white*, it cannot be said to be *white*.

The *Disparates* have but *one Canon*, *One of the Disparates being granted, the rest are taken away*: as, *if Socrates be a man, then he is neither a horse nor a stone.* This *rule* faileth in *accidents*, when they are attributed unto *subjects*

...ke in the *converse*, for the same *mest* may ...ake and *swear*.

The *Canons* of *like* and *unlike*, *proportional* and *unproportional*, are these.

Like and proportional do agree with like and proportionals: dislike and unproportional do agree with dislike and unproportionals: as, *if* Plato is *mortal*, Socrates *is also mortal*: *if the eye rules the body, then reason should direct the mind.* This *rule* faileth unless it be understood *reduplicatively*, that is of *like* as *like*: for every *like* is also *unlike*, or else it could not be *like*, but the same: and hence a *Crow* cannot be said to be *rational*, because a *Blackamore* is so, and so of the rest. And here the respondent (if he do except against the *Argument* founded on this *Canon*) must shew in what the things propounded are *like* or *unlike*.

Probable propositions, and things *compared* among themselves, are said to be *more* and *less* and *equals*. The *Canons* concerning *comparison* of things are *general* or *special*.

The *general rules* are these.

1. *That which is such by nature, is more so than that which is so by participation*: as, *the Sun is lighter than the air.*

2. *That which is by it self is more so, than that which is by accident.*

3. That

3. That which is more remote from the cause, is more than that which is nearer; as, ...er is colder under the Poles, than under the ...pick.

4. That which makes more, is more than that which maketh less; as, fire vehemently ...ing.

5. That in which the cause is more inherent, is more than that in which it is less; as, a ... man is stronger than an old.

6. That to which the definition or the name is more agreeable, is more than that to which it is less; as, that which doth more conduce to the end, is more profitable, and many more which do all fail, unless there be a restriction to the rest being like; for cases of comparison do almost exceed one another mutually and are exceeded.

Special rules concerning that which is more or less good are these.

1. The more good things there are in any ... the better it is; as, a perfect thief ... is better than the Stroke.

2. The more it is good, the better yet. ... is better than sufficient.

3. That which is good for it self, is better ... than that which is good for another.

4. That which is in it self good absolutely ... good, is better than that which is not so.

5. ...

5. *That which is more durable, is better* : as, *vertue is better than beauty.*

6. *That which is solitarily good is better* : as, *competency is better than great riches.*

7. *That which hath the more noble object is better* : as, *Divinity is better than Physick.*

8. *That which leads to perfection is better than that which serves for necessity* : as, *seeing is better than feeling.*

9. *That which is the nearer to the end is the better* : as, *The Harvest is better than Seed-time.*

10. *That which tends to the more noble end, is better* : as, *Liberal Arts are better than Mechanical.*

11. *That which is the more like the better is better* : as, *Brass is better than Lead.* And many more of this kind, *Lib.* 3. *Aristotles Topicks.* All which are to be understood with this limitation, *that all other things be alike.*

The *Canons* of the *Probability* of propositions are these.

1. Of such propositions, which are *wholly such* or *not such* : if one be *such*, the other *is*, if the one be *not such*, neither is the other : as, *honour* and *riches* do *both* seem to conduce *alike* to *happiness* : if *honour*

therefore do not make a man happy, ... do riches; if meat be necessary to ... life, drink is also necessary.

2. If that which seems more to be such, ... not such, that which seems less to be such ... not such; as, all that like Mævius, do ... Homer.

3. If that which doth less seem to be ... do such, then that which doth more seem ... such is such also; as, if he that is guilty ... deserves to be hanged, he that is guilty ... sacrilege, doth much more deserve it.

CHAP. XIV.

Of the Topicks, concerning Conjug... and Notation.

THey are properly called Conjug... which for the affinity of signific... have also an affinity in the voice or sound ... just, justice, and justly; some Conjug... only nominal, some real and some both ... do comprehend Denominatives under ... and are either substantives, where one ... Man substantive; abstracted from the ... is an justice, just; or an adjective, ... may be both Denominative, or De...

which shew the *form* in the *abstract*: as, *justly*. *Notation*, or *Etymology*, is the *explication* of a word by the original thereof; as, a *Consul* from *consulting* the *commonwealth*.

The *Canons* or *Rules* of *Conjugates* are,

1. *That to which one of the conjugates doth agree, the other doth agree also*; and the contrary: as, *if* Socrates *be just*, *he will do justly*. This *rule* faileth 1. in those which are *nominal Conjugates* only: for if *Socrates drink wine*, it doth not presently follow, that he is *a wine-bibber*, that is, a *drunkard*. 2. When we argue from one or some *few actions*, that there is a *habit*, and therefore it doth not follow, that Socrates, *is just*, because he hath done some things that are *just*. 3. When we argue from the *power* to the *act*: as, *Socrates is risible*, though he do *not laugh* at present.

2. If *one* of the *Conjugates* may be *predicated of one*, the *other* may be *predicated of another*, and so also *negatively*: as, *if white be a colour*, *white should be a thing visible*. This *rule* faileth 1. in those which are *nominal conjugates only*; as it doth not follow that *wine is an evil thing*, because *wine* is so. 2. In arguing *oppositively*.

from the *concretes* to the *abstracts*, where the predication is not by it self; as, it doth not follow that *whiteneſs is ſweetneſs*, becauſe ſomething that is *white* (as *milk*) is *ſweet*.

3. In arguing *negatively* from the *abſtracts* to the *concretes*; as, becauſe *no* whiteneſs is ſweetneſs, it doth not follow that *nothing that is white*, is *ſweet*.

The *Canons* of *Notation* are *two*.

1. *That which doth or doth not agree to notation, doth, or doth not agree with the thing noted*; as, if the *ſtudy of wiſdom* be to be preferred before the *ſtudy of the military art*: *Philoſophy* is alſo to be preferred before the *military art*.

2. *That of which the thing noted* is predicated, *notation* is *alſo predicated*, and the contrary; as, *if there be a ſolſtice, the Sun doth ſtand: if there be no holy thing taken away, there* is *no Sacrilege*.

The *Topick* from *notation* is more delightful than forcible, and the *Canons* thereof do fail very often: as, 1. If the *notations* be too much ſtrained; as, it doth not follow that *Thomas Perſeval* is *therefore wiſer than all men*, becauſe he doth *preſcribe all*. 2. If in argumentation *a true notation* or *etymology* be taken in a *falſe manner*; as, it doth not follow that *Socrates doth teach* or *inſtruct* his [illegible]

because he is a *teacher*, for he is indeed called a *teacher* from *teaching*, or because he *ought to teach*; not because he *doth always actually*; and by several other waies, which a diligent observer may easily understand.

CHAP. XV.

Of the Topicks from the Whole and his Parts.

THe *whole* and its *parts* are *relatives*.

The *whole* is that which is *compos'd* by the *union of all the* parts; as, a *man*: The parts are those which are *united* in the *whole*, as *the head, the breast, the legs*. The *essential parts* of an *essential whole* are *matter* and *form*. The *integral parts* of an *integral whole* are those which *differ* so in their *situation*, as that *one part* may be *separated* from *another*: as the *parts* of a *house* are, the *foundation*, the *walls*, the *roof*. An *Homogeneal Integer* or *whole* is distributed into *Homogeneal* or *similar parts*, of which every one hath *name* and *notion* of the *whole*: as, *every part* of *water* is *water*. An *Heterogeneal whole* is

bated into *Heterogeneal* or *dissimilary parts*, which have *distinct names* and *natures* from the *whole*: as, the *parts of a man* are the *head, hands, feet*, &c. *Parts* may be considered either every one *single* by its self, or all of them *joyntly and together*.

The *Canons* or *Rules* are these.

1. *The whole being granted, the parts are granted also*: as, if there be a *house*, there is a *foundation*.

2. *If the parts be taken away, the whole is taken away also*: as, if there be *no foundation*, certainly there can be *no house*, both these rules fail. 1. In *equivocal parts*, and *parts* so called *improperly*: as, it doth not follow that he is *not a man*, because he hath *neither hair nor nails*. 2. In *subjects*, there is *some part* not *simply* necessary: as he may be a *man*, though one of his *fingers* or *hands* be cut off.

3. *The whole being taken away, the parts are taken away*: as if there be not a *house*, there is not a *foundation*.

4. *The parts being granted, the whole is granted*: as if there be a *foundation*, *walls*, and *roof*, there must be a *house*. Either of these rules fail, when the *parts* are taken by *similitude*: as, there may be a *foundation*, though there be no *house* as yet.

CHAP. XVI

CHAP. XVI.

The Topicks from Genus and Species.

Topically Genus and *Species* are not always taken as in the *predicables*: for the *Genus* is every *essential predicate*; whether it be a *Genus*, properly called the predicate of some *species* or *individual*: as *Animal* spoken of *man*, or of *Socrates*: or a *Species* spoken of *individuals*, as *man* of *Socrates*; whether a *Generical* or *Specifical difference* spoken of the *inferiour species*, which constitute; as *sensibility* of *man*, or *Socrates*.

In like manner by *species* here, we do not only understand that which is properly so called, which is immediately under his *Genus*, but a *Specifical difference*, and also an *individual* it self: and whatsoever is *superiour* to something *inferiour*, in that particular in which it is *subjected*, is called by the name of *species*.

The *Canons* or *Rules* of *Genus* and *species* are

1. *If the Genus be taken away, the species*

is taken away also: as, if there be not an *Animal*, there is neither *man* nor *beast*, nor *reasonable creature*.

2. *The Species being granted, the Genus is also granted*: as, if there be a *man* or some thing that is *rational*, there is an *animal*: These *rules* hold alwaies.

3. *What doth or doth not agree with the Genus, doth also agree or not agree to the Species*: as, if an *animal* be sensible, a *man* is so: if it be not *corporeal*, neither is a *man*. This *rule* falleth; 1. In a *material* or *simple supposition*, for neither is *man* a *Genus*, because there is an *animal*, or not a *Species*, because there is an *animal*. 2. In those things which do agree or not agree in *part* only, and not *universally*: as, neither is a *man irrational* because some *animal* is so, or *no rational* because some *animal* is *not rational*.

4. *What doth or doth not agree to the Species, doth or doth not agree unto its Genus*. This must be explained *two* waies: 1. What doth or doth not agree to any *Species*, doth or doth not agree to its *Genus* in *part*: thus are *Syllogisms* in the *third* figure: as, if *man* be *rational*, or not *four-footed*, certainly some *animal* is *rational*, and some *animal* hath not *four feet*. 2. What doth or doth not agree to all the *Species*, doth or doth not agree to all

&c.

the *Genus*: hence *indefinites* are formed: as, *Socrates*, a *horse*, &c. be *sensible*, or are *not immortal*: certainly every *animal* is *sensible*, and no *animal* is *immortal*.

CHAP. XVII.

Of the Topicks from Definition and Division.

Definition, *Topically* taken, doth comprehend not only every *essential definition*, but every *perfect description* of a thing also, and every *convertible predicate*, as the *constitutive difference* and *proper accident*. But *division* is so taken, as in the *second* book of *Logick* is expressed, *Chap.* 2.

Definition hath this only *Canon*. *The Definition being granted, or not granted, the thing defined is also granted or not granted*: and the contrary: as, if there be a *rational creature*, there is a *man*, and the contrary: if there be not a *man*, there is no *rational creature*, nor on the contrary. This *rule* faileth in those things which agree to the *definition* of the *thing defined* as a *definition* or *thing defined*; for if a *rational creature* be a compounded speech, it doth not follow that

...man, otherwise it is always true: for ...is founded in their mutual reciprocation.

Division hath this only *Canon* also: *One member of the dividing members being taken away, the other is taken away also, and one being granted, the other is also granted*: as, if this *animal* be not a *brute*, it is a *man*; if it be a *man*, it is not a *brute*. This doth always hold in every good *division*: for it is founded upon these two *Canons* of a *perfect division*. 1. The *members* do take up the *whole* that is to be *divided*. 2. The *dividing members* are contrarily *affixed* and *opposite*, so that they can neither *agree* nor be *confounded*.

CHAP. XVIII.

Of the Topick from Testimony.

WE are now to speak of *inartificial arguments*, or such as are not *fetched* ...the rule of art. Such *common* ...

Testimony

Testimony or *Witness* is either,

Divine:
- By *Revelation*, as the *Scriptures* [illegible] *Dreams* and *Visions*, &c.
- By *Operation*, as the *judgements* of *God*, *miracles*, *experiences* of God's *justice*, *power*, and *providence*, and unto this the *Testimony* of *nature* may be referred.

Humane:
- *Proper*, as the *Testimony* of the *senses*.
- *Common*:
  - *Publick*, as *Customs*, *Laws*, *Monuments*, &c.
  - *Private*: as, *Confessions*, *Wills*, *Oaths*, *Compacts*, the *Judgement* of *Authors*, and such like.

Some *Testimonies* are more firm than others, concerning which many *Canons* or *Rules* might be given: some of the chief are these which follow.

1. *Testimony in the negative is of no value*, [illegible] it doth not *follow* that it is not [illegible] *truth hath no where made mention of it*. This [illegible] faileth: 1. In those things which are [illegible] commanded without [illegible] cause it is not in the *Scriptures*, [illegible]

not to be *believed*; nor is it a *capital* crime to *swear rashly*, because no law hath made it *capital*. In those things in which an *author* either should or hath promised to discourse *fully*; as, *Aristotle lib. 1. Metaphys.* where he promiseth to enumerate the several *species* of *quantity*, yet makes no mention of *place*; is not *place* therefore one *Species* of *Quantity*?

2. *Divine Testimony* is *of infallible truth*; as, *Christ* is the *Messiah*, because the *Scripture* saith it. This *Rule* never faileth.

3. The *Testimony* of *sense* is surely to be believed; as, *fire* is *hot*, because *sense* sheweth it to be so. This *rule* faileth when a reason can be *formed*, that the *senses* are deceived; as, a *staff* is not therefore *crooked*, because it seems so when it is in the *Water*.

4. *An artist is to be believed in* his *own art*; as, *a perfect birth* may be in *seven months*, *Hippocrates* affirmeth. This *rule* faileth where others as skilful, or more skilful, do think and affirm otherwise: as there are now, though *Plato* affirm it, because *Aristotle* opposite it. 5. Where *sense* or *reason* doth [illegible] as *Snow* is not *black*, though *A.* doth say it; nor [illegible] of an

elementary nature, though *Aristotle* doth affirm it: because the one is contrary unto that, and the other unto *reason*.

5. *The Testimony of many is to be received, before the Testimony of a few*: as it is more probable, that there is an *element* of *fire*, because *many* think so, then that there is not, that being the opinion but of a *few*. This rule faileth. 1. When the *fewer* are the *wiser*; as, *vertue* is to be preferred before *riches*, because the *wiser* sort do think so. 2. Where the *fewer* in number do give the *strongest reasons*: as, *Logick* is an *art* rather than a *science*, though they are the *fewer* number that think so, because it appears to be so by *most plain* and *strong Arguments*.

6. *The Testimony of the Antients is to be preferred before the Testimony of the Neotericks*; which is especially to be received in things belonging to *piety* and *good manners*: for in things of *art* and *ingenuity*, the *antients* without doubt are much out-done by *men* of *latter years*: it being easier to add something to things already invented, than to *find out* new inventions.

CHAP.

CHAP. XII.

Of Fallacies in the General.

Hitherto we have spoken of a true Syllogism, as it consists either of necessary or probable matter: it remaineth now that we speak of a Sophistical Syllogism.

A Sophistical Syllogism, *is a captious kind of argumentation, which is framed by subtilty, or appearance of probable, that is indeed deceitful.* The Antients did call those Sophisters who endeavoured to obtain Glory by disputation, and that by few words or means, especially by shifting the Question.

1. To *Redargution*, which is the denial of something that was before granted, or the assertion of something that was before denied: When the Respondent is forced to contradict himself.

2. To something that is *false*: as, when he assents of something that is apparently known to be so.

3. To something *contrary to common sense*: as, when he admits of some proposition

is *contrary* to the *common received opi-*

2. To some *Solecisme*: as when he *admits* some things *contrary* to the *rules* of *Gram-*
r: or,

3. And lastly, to some *trivial* and *vain thing*: when there is a *vain* and *useless repetition* the same thing.

These *fallacious* ways of *arguing*, *Aristotle* well referred to these *two* heads, to *fallacies* of *words*, or in *things*: Of *Fallacies* *words* he reckons *five*. *Ambiguity*, *Am* *Composition*, *Division* and *Figure* of *d*: Of *Fallacies* in *things* he names *seven* *dem*, Of *a thing spoken after a sort* *spoken simply*, *Ignorance of the* *false* or *wrong Cause*, *Consequent*, *Begging* *question*, and, *An asking of many questions*.

CHAP.

CHAP. XX.

Of Fallacies in Words.

ALL *Fallacies* in *words* arise from some *Multiplicity* that is in them: and the *multiplicity* that is in *words*, is either *Actual*, *Potential*, or *Phantastick*.

1. *Actual*, when a word without variation hath many meanings; as, in *Equivocation*, and *Amphibolie*.

2. *Potential*, when a word being altered in the pronunciation, hath many meanings; as in *Composition*, *Division*, and *Accent*.

3. *Phantastick*, when a word doth really and indeed signifie but one, and yet doth seem to signifie many things, as in the *figure* of a word.

A *Fallacy* of *Equivocation*, or *Homonymie*, is when some *simple* word is diversly taken in the several propositions of the same Syllogism: and this may be *three waies*.

1. When *one word* is applied to *several things*; for example,

Every Dog doth bark,
The Dog-Star is a Dog,
Therefore the Dog-star doth bark.

2. When a word *properly* signifying but one thing, is by *Analogy* or *Metaphor* applied to another; as if one would prove that *a man* hath *feet*, because it *runs*, or the *meadow* a *mouth*, because *it* smiles.

3. When there is some ambiguity in respect of the *accidents* of the parts of speech, according to *Grammar*: as, if one would prove that he which is *sitting* doth *stand*, because he *did rise*.

In these *Fallacies* there are *four* terms, and may be resolved by shewing the *several significations* of the *ambiguous word*.

A *Fallacy* of *Amphibolie* is when some *sentence* is doubtful by reason of the *construction*, and this may be *three* waies.

1. The *construction* of the words being the *same*, but under a *diverse habitude*: as, if one would prove this to be *Aristotle's* book because he *made* it.

2. By changing the *order* of the *construction*, as thus,

That which one doth see is true,
But you saw Thomas *drunk,*
Therefore it is true that Thomas *was drunk.*

3. When a sentence hath both a *proper* and a *Metaphorical* sense: as thus,

They which laugh have mouths,
The Meadows do laugh,
Therefore the Meadows have Mouths.

And to this belong all *proverbial* speeches, and may be resolved by shewing the *ambiguity* of the sentence.

A *Fallacy* of *composition*, is when such words are joined together, which should be disjoyned: and the contrary unto this is a *Fallacy* of *division*, when such words are severed which ought to be joyned together: both of these may happen four wales. 1. When the *dictum* in a *simple proposition* may be put for its *whole self*, or for a *part of its self*: as for example, *his profession saw him that is sitting to run*: the whole proposition is *false* if taken together, for while he doth *sit*, he cannot *actually run*: but being disjoined, it is *true*, for he that doth now *sit*, *at another time may run*. 2. In *Hypothetical* propositions, whose parts are joined by some conjunction *copulative* or *di-*

...live; as, *two* and *three* are *even* and *odd*, but *five* are *two* and *three*, therefore *five* are *even* and *odd*. 3. When some word in a sentence may be joyned to *diverse things*: as for example:

He that may now be truly said to be born, is born in this hour:
But a man that is threescore years old may now truly said to be born:
Therefore a man that is threescore years old is born in this hour.

4. When two things are taken severally in the premisses, and conjunctly in the conclusion, or the contrary; as thus:

This dog is a spaniel,
And this dog is yours,
Therefore this dog is your father.

In these there are *four* terms, and are resolved by seperating the *divided* from that which is *compounded*, and shewing which of them is *true* and *genuine*; and which not.

A *Fallacy* in *Accent*, is when the *same word or sentence doth signifie diverse things, by reason of the different accent or*

sure of pronunciation: and this may be
wrought 1. By making a *wrong pronunciation*
long Syllable for a *short*, or the contrary. 2.
the *diverse writing*, without a *diphthong* or
piration: as thus, They that could propou
Shibboleth were safe from the *Gileadites*, b
the *Ephraimites* could pronounce *Sibbo*
therefore they were *safe*. 3. When *one* wor
made of *two*, or *two* of *one*. 4. By chang
the *manner* of the pronunciation, as thus
Mother saith, well done, doth acknowle
action to be good: But he that derides
doth say, well done! *Therefore he that deri*
mother, doth acknowledge the action to be g
In these also there are *four* terms, and they
solved, by shewing the reason of the
sense or *writing*.

A *Fallacy* of the *figure* of a word, *is*
for some similitude and likeness of words, that
seems to agree to one thing, which is proper to an
other. But these *Fallacies* have the least shew
probability, and therefore are but rarely
and are many of them solved by
that the words are indeed like, by reason
some accident, as, *sound* or *termination*, but
in *substance sense* or *signification*.

CHA

CHAP. XXI.

Of Fallacies in Things.

Fallacies in things are seven.

1. A *Fallacy of accident*, when that which agreeth to one of the terms in a Syllogism by accident, is attributed unto another, as if were essential. This happeneth,

1. When we argue from the *accident* to the subject, and the contrary; for example: that which causeth drunkenness is to be removed. Rain is the cause of drunkenness, therefore Wine is to be taken away. 2. When the *Genus* of supposition is changed, the *material* into *formal*, the *simple* into *personal*, and the contrary; as thus, *An animal is a Genus, a man is an animal, therefore a man is a Genus.* 3. When we argue from the *Superiour* to the *Inferiour*, and the contrary: as if we would prove that *rationality* is convertible with *a living creature*, because it is convertible with *man*. These are solved by distinguishing that which agrees with any thing of it self, from that which doth so *by accident*.

2. *A Fallacy from a thing spoken in some respect to a thing spoken simply*: and this is when

from

from the *means term* disposed with limitation or after a sort with *both* or *either* of the *extremes*, a *conclusion* is inferred *simply* and *absolutely true*. And this may be *three* waies. When the *limitation* added destroies the *matter* to which it is added; as, *Socrates is a dead man, therefore he's a man*. 2. When the *limitation* added, doth signifie a *part*; as, *Blackamore hath white teeth, therefore a Blackamore is white*. 3. When the *limitation* added, doth signifie some *notable circumstance of time, place, person*, and the like; as, *It is fit to cast the Merchants goods into the Sea for the preservation of the men in the ship; therefore it is fit to cast the Merchants goods into the Sea*. These are solved by distinguishing that which is *simply* and *absolutely* so, from that which is so in *some respects only*.

3. *A Fallacy from ignorance of the question*, and this is, when either the *state of the question* is quite turned or wrested, or the *adversaries conclusion* is not directly opposite to our *Thesis*, according to the *rules of lawful opposition*. This happens if the disparation, 1. Be not to the *same thing*, *Socrates is rich*, if he be compared with *Crœsus, poor*, if compared with *Crœsus*, therefore *Socrates* is both *poor* and *rich*. 2. If

not so in reference to the *same*; as, no *Blackamore* is *white*, every *Blackamore* is *white in reference to his teeth*, therefore a *Blackamore* is and is not *white*. 3. If it be taken in the *same manner*; as Socrates doth *run freely*, Socrates *doth not run freely*, therefore Socrates *doth and doth not run*. 4. If be not in reference to the *same time*; as, *The faithful under the law did believe that Christ was to come, The faithful under the Gospel do not believe that Christ is to come, but that he is come, Therefore the faithful do and do not believe that Christ is to come*. All *Fallacies* may in some sort be reduced unto this of *ignorance of the argument*, even as all *opposition* may be reduced to *contradiction*. These are solved by observing the *defect of the contradiction*, in some of the *four* mentioned conditions.

4. *A Fallacy from that which is not the cause for the cause*. And this is when that is brought for the *true cause*, which either is *no cause*, or else *a cause only by accident*, or *not like unto the effect*. This happens 1. When that which is *not* the *true cause* is brought for the *true*; as if one would prove such a *war to be a just war*, because of the *appearance of it*. 2. When that which is the *cause by accident* is brought for the *true*: as if one would prove that the *use of wine is to be for-*

bidden

drunk, because it maketh men drunk. These *Fallacies* are very useful in such *syllogisms* which drive the respondent to something that is *impossible*; and they are solved, by denying the *false cause*, and shewing the *true*.

5. *A Fallacy of the consequent*, and this is when that is inferred from the *antecedent* or the *consequent* which yet is not the *consequent*. This happens as often as the *rules of conversion* or *conditions of syllogisms* are not observed. And these are solved by shewing the *weakness of the inferences*, either from the *rules*, or from some other *inferences of the same sort* which are *infirm*.

6. *A Fallacy from begging the question*, and this is when that is used for the *medium* which is *not granted*, or is *different from that which is sought*, but as much unknown. This happeneth many waies. 1. When the *thing sought* is taken in the *same terms*, as thus, *every man is rational, every man is a man: therefore every man is rational.* When the *thing sought* is expressed in words *Synonymous* or *equivalent*; as if one would prove that a *shilling* is the *twentieth* part of a *pound*, because *twelve pence* is so. 3. When the *question is proved* by that which is as much or more unknown: as 3. *Hyperion is*

moveable, because the earth is moveable. 4. When *two propositions do mutually prove one another*; as if one would prove that *fire* is the *hottest*, because the *thinnest*; and then again that it is the *thinnest* because the *hottest*. It is solved by shewing the *vanity* and *folly* of such arguing.

7. *A Fallacy of asking many questions*; and that is, when *many questions* or *conclusions* are confounded *in one*. This may be *two* waies: When the *same predicate* is sought from *divers subjects*; as, is the *Earth*, *Sea*, or *Heaven*. When *diverse predicates* are sought from *one and the same subject*; as, is *man*, *a living creature*, and *a stone*. These are solved not by answering in *one answer to all the parts of the question together*, but *distinctly to every one*.

And thus much concerning a *Sophistical Elegism*.

CHAP. XXII.

Of Method.

I Am now to speak of *Order* or *Method* which is the fourth and last Logical Instrument. And, *Method is the disposing of things belonging to the same matter or subject, so, as that they may be best understood, and easiest remembred.*

2. That the limitations of this Definition may be observed, such things must be premised as may conduce to the knowledge of those that follow, or those things at least must be spoken of which are more easie to be understood than the rest.

3. *Method is twofold, Natural or Arbitrary.*

4. *A natural Method is that in which the order of nature and our distinct knowledge is observed.* Some controversie there is here amongst writers, whether in the writing of any subject, it be fit to speak of those things first which are first in nature, or those things with which we are best acquainted. And I think for the most part, we are best acquainted with that which is first in nature; but if at any time it happen otherwise, then I concur with

ture, that those things are to be spoken of first, which come first under our cognizance, and not those that are first in their own Nature.

5. *In a natural Method all the parts ought to be Homogeneal.* We ought not in a Natural Method to mingle one science with another, as Ethicks in a treatise of Geometry, or Geometry in a treatise of Ethicks. This must be strictly observed in all the precepts which belong to the essence of any science: but in the commentaries or expositions of any precepts, we may make use of any other science as well as that of which we write or speak: as in writing of Physick, we may repeat something of Logick, or in writing of Ethicks we may make use of something in Physick.

6. *In a natural Method, we must speak first of Generals, and then of Particulars; and as we proceed from one thing to another, every part must have a dependence on that which was last spoken, by some apt translation.* This dependence or connexion must be in this or the like form: and this shall suffice to be spoken of this thing: the next in order to be spoken of is, &c. How much such forms do help the memory, is very hard to be believed.

7. *A Natural Method is either Total or Partial.*

8. *A Total Method is that in which a whole Science is methodically ordered or disposed.* And this is either *Synthetical* or *Analytical.*

9. *A Synthetical or Compositive Method is that, which begins with the first and most simple principles, and so proceeds to those which do arise from, or are composed of these first principles.* And according to this Method we are to write or speak of all speculative arts.

10. *An Analytical or Resolutive Method is that, which begins with the end, and so proceeds still lower and lower till we come to the first and most simple beginnings.* And according to this Method, we are to write or speak of all Practical arts.

11. *A Partial Method is that, by which any part of any art or Science is methodically ordered or disposed: Or by which any particular Theam or Subject, is handled by it self.* In this Method we are to consider, that as it is a part of a Total Method, it oft times so falls out, that in handling a part of some Science, we ought to observe the Analytical Method; if the whole Science be to be handled in a Synthetical, or the contrary: that is, in such a Science in which the whole is to be handled in an Analytical Method, a part thereof must be han-

led in a Synthetical. As for example, if we were to write of all Physicks, we must write in a Synthetical Method, but if we were to write of that part which concerns a living body, it were fit to observe the Analytical Method, beginning first with the actions, which are the ends of life; then proceeding to the causes and principles which are the faculties of the soul, the temperaments and the Organical parts of the living body; and as some particular Theam or Subject is to be handled by it self, we are to consider, That in simple theams we are first to explain the name, by shewing the Etymology, and explaining the words that are Synonymous thereunto either in the same or in other languages, if it may any thing conduce to the explanation of the Theam propounded: next to the name we are to consider the neareſt Genus and Causes; and if the Theam be an accident, the Subject and Object also; and hence the Definition thereof must be composed. To the Definition we must add the adjuncts and effects, &c. But in compound Theams first the question must be rightly stated, and then the proper and genuine sense must be confirmed by good reason and proof, of these things I have already spoken more at large in my Art of Rhetorick.

12. *An Arbitrary Method is that which not regarding*

regarding the natural order is fitted for such a confused knowledge as may be most taking with the people, or fute best with their capacities. If we are to speak to sober, judicious and knowing men, there is no question, but that we ought to speak of things in their natural order; but if we have to do with the common sort of people, and such as are guided more by sense than reason, we are to consider of their capacities, and to speak of things not as they are in their natural order, but as they are or may be best apprehended by them.

And thus much concerning *Method*, which is the fourth and last *Logical Instrument*; and with this I shall conclude these my *Logical Precepts*.

Soli Deo Gloria.

FINIS.

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FINIS.

those are called Simple Terms whose parts can signifie nothing, when they are separated from the whole, or no such thing as they did signifie, when they were all joyned together, and these are either Categorematical or Syncategorimatical.

1. Categorimatical or significative terms, are such simple Terms as do by themselves signifie something perfectly, and these are either Nouns or Verbs.

A Noun is a simple term or word, which doth signifie some certain thing without distinction of time; as, a man, a horse.

A Verb is a simple term which doth signifie something with some distinction of time past, present, or to come, as he runneth.

2. Syncategorimatical or consignificative terms are such simple terms, which of themselves do not signifie any certain thing, or constitute a proposition, but being joined with other words are significative to express the manner of such a thing; and such are all words which serve to express the quantity of a proposition, as, *all, none, some*, &c. all *Adverbs*, *Conjunctions*, *Prepositions*, and *Interjections*.

The parts signified are *Compounded Terms*, or such as do signifie the same thing being seperated from one another, as they did

signifie

signifie when they were joined together; and these terms are otherwised called *Orationi*, and *an Oration* is either *imperfect* or *perfect*.

1. An Imperfect Oration is that which leaves an imperfect sense in the mind of the hearer; as, a rational creature, a learned man.

2. A perfect Oration is that which leaves a perfect sense in the mind of the hearer; & that is either *not enunciative*; that is, such an oration as doth not express whether a thing be true or false, of which there is no use amongst Logicians; or *enunciative*, that is such an oration, as doth express whether a thing be true or false: and this may be either *with ambiguity*, when some word is ambiguous: as there is a Dog in Heaven: or *without ambiguity*, when there is no word ambiguous: as in this proposition, a man is a living Creature.

Place this between the 52 and 53 pages, and blot out the Two First Lines of the 53 page.